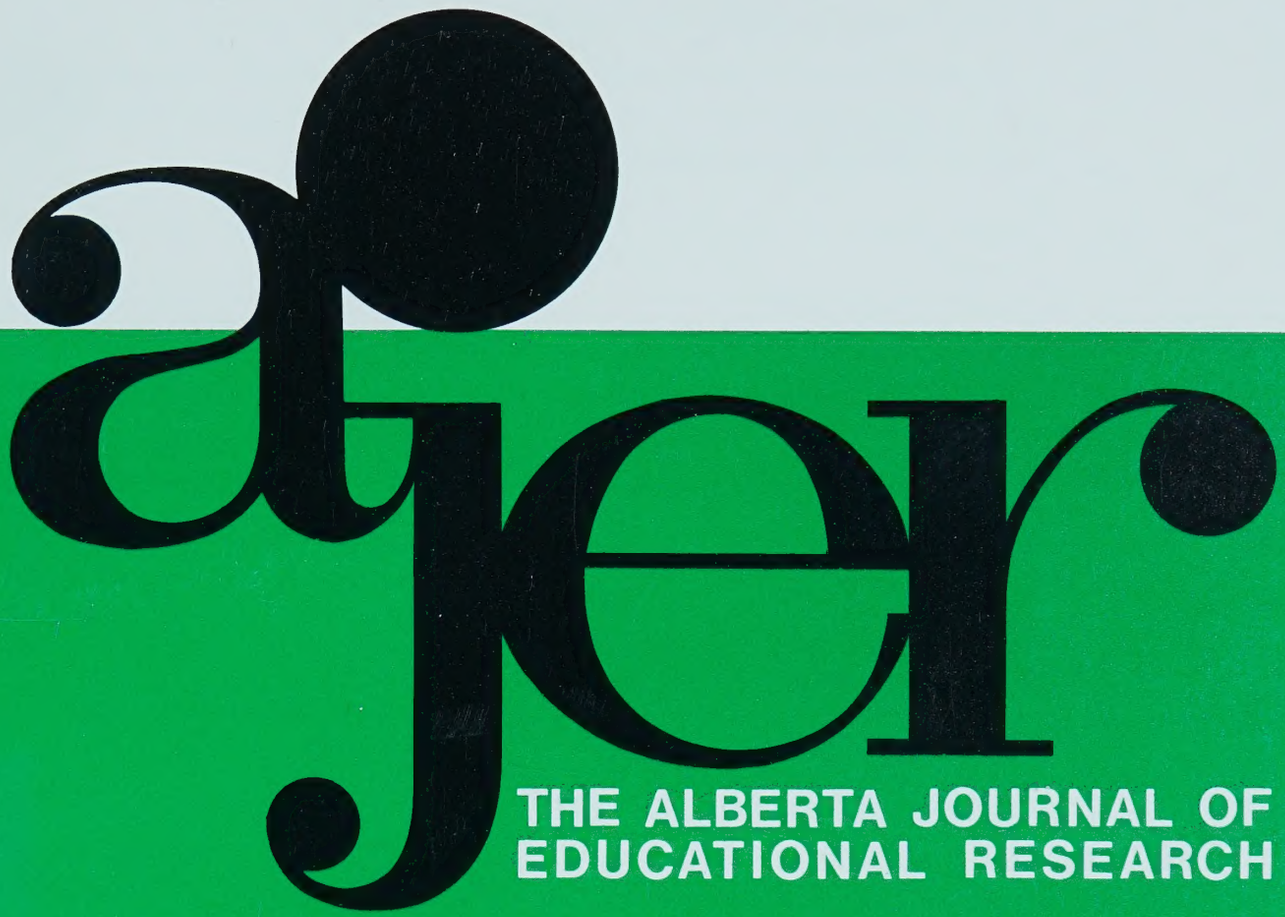

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and

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University of Alberta

Semantic Differential Responses to Educational Posters on Acquired Immune Deficiency Syndrome (AIDS)

The responses of 131 undergraduate university students, on a nine-item semantic differential scale, to eight educational posters dealing with the Acquired Immune Deficiency Syndrome (AIDS), were tested using Analysis of Variance (ANOVA). Post hoc analysis, using the Scheffé test, was performed in order to determine which differences in ratings were significant. The posters utilized different themes and messages ranging from highly informative to humorous. Some relied heavily on homosexual content. The common objective of the posters was to educate individuals about AIDS and AIDS prevention. Two posters were consistently rated as more informative, reassuring, effective, decent, and better than the others. The first utilized an objective and informative approach, whereas the second stressed personal responsibility in disease prevention. A number of posters were negatively received. Gender differences in reactions were not noted. Implications for educational programs and further research are discussed.

Les réponses de 131 étudiants du premier cycle universitaire aux neuf items d'une échelle de sémantique différentielle, comportant huit affiches éducatives sur le Syndrome Immuno-Déficitaire Acquis (SIDA) ont été évaluées à l'aide de l'analyse de la variance. L'analyse post-hoc, à l'aide du test de Scheffé, a été faite pour déterminer les différences significatives dans les réponses. Les affiches portaient sur des thèmes différents et des contenus allant des plus informatives aux plus humouristiques. Certaines affiches s'inspiraient d'un contenu d'homosexualité. Les affiches avaient pour objectif commun d'éduquer les individus au sujet du SIDA. Deux affiches étaient jugées, la plupart du temps, comme étant plus informatives, plus rassurantes, plus efficaces, plus décentes, et meilleures que les autres. La première utilisait une approche objective et informative, alors que la seconde mettait l'accent sur la responsabilité personnelle dans la prévention de la maladie. Certaines affiches ont eu une réception négative. Il n'y avait pas de différences dans les réactions dues au sexe des répondants.

The Acquired Immune Deficiency Syndrome (AIDS) has the potential to become the greatest natural tragedy in human history (Masters, Johnson, & Kolodny, 1988). Health educators have adopted a tripartite model to deal with the problem (Shernoff & Palacios-Jimenez, 1988), focusing on primary, secondary, and tertiary prevention. Effective education has been advocated as the

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only viable means to prevent, reduce, and delay the spread of AIDS (Lenaghan & Lenaghan, 1987; Norman, 1986) and occurs at the level of primary prevention. Posters, leaflets, pamphlets, radio, and television advertising have been part of numerous campaigns directed at communities all over the world in attempts to control the disease (Fineberg, 1988a; 1988b). However, although ignorance about AIDS may be eradicated, this is only half the battle. Evidence of a study of knowledge, behavior, and attitudes of 38,000 Canadian youths indicates levels of knowledge alone have not brought about changes in sexual practices (King et al., 1988). Baldwin and Baldwin (1988a), Fineberg (1988a), Flora and Thoreson (1989), Kegeles, Adler, and Irwin (1988), Kelly, St. Lawrence, Hood, and Brasfield (1988), Sherr (1987), and Strunin and Hingsen (1987) found similar gaps between knowledge about AIDS and behavior change.

Spurgeon (1988) states that the Australian National Advisory Committee on AIDS found a number of barriers to absorption and behavior change in AIDS education. These included messages that were too reassuring, paranoia resulting from too little reassurance, a negative image of condoms, and a perception that condom use was an acknowledgment of guilt. Baldwin and Baldwin (1988b) note that little research has been undertaken to evaluate what kinds of education will be appropriate. Flora and Thoreson (1989) maintain current research contributes little to the understanding of how to tailor messages and utilize appropriate methods of communication in AIDS education.

In the present study reactions to different educational posters used in public health campaigns were measured according to a nine-item semantic differential scale in order to provide feedback about how the subjects perceived the educational posters. Ratings on the semantic differential scale are intended to reveal particular dimensions that people use to qualify their experience and may reflect intensity of feeling for an attitude object (Zimbardo & Ebbeson, 1969). These particular dimensions may be of relevance to AIDS educational programs, particularly in light of Fisher's (1980; 1986) and Fisher, Byrne, White, and Kelley's (1988) findings that suggest emotional orientations toward sexuality influence an individual's ability to learn sexual material.

Method

Subjects

One hundred and thirty-one third- and fourth-year students in a Canadian university faculty of education program took part in the survey. There were 56 male and 75 female students in the sample. The mean age of respondents was 23.7 (SD=5.61) and ranged from 19 to 57 years. Twenty-six were married (8 male, 18 female) and 105 single (48 male, 57 female). The students were tested in a classroom setting during regular instructional time. Participation was entirely voluntary.

Survey

Contrasting informational and educational posters on AIDS that relied on different themes to convey information were surveyed. A brief description of each poster follows.

The first poster showed a young male wearing denim jeans, viewed from the back. There is a condom in his pocket. The poster bears the inscription "A

rubber is a friend in your pocket." The second poster depicts two muscular male chests touching each other, with the statement "Condoms—Use Them." The third poster is captioned "Which of these will give you AIDS?" and shows misconceptions concerning possible means of transmission, that is, through using cutlery, toilets, drinking glasses, or telephones. The fourth poster shows a male reclining provocatively, in a state of undress in bed, and is captioned "You'll never forget the feeling of safe sex." Below that inset into a little box is the statement "Hot Nights Safe Sex," advocating the use of condoms. The fifth poster shows a picture of Michaelangelo's statue *David* with the caption "Get It Under Cover." Inset into a box below is the warning to "Play it safe." The sixth poster shows a well proportioned muscular upper body of a male with a caption suggesting that it is masculine or manly to use a condom to prevent transmission of diseases. The seventh poster shows a group of males with their arms around each other at the beach, wearing brief swimsuits. The caption reads "Have a safe sex summer." The final poster shows a picture of a pensive adolescent male staring at the viewer. The caption reads "Stopping AIDS is up to you."

Respondents were asked to rate their responses to these eight posters according to a nine-level semantic differential scale. The semantic differential scale was developed by Osgood as a method of studying attitudes by focusing on the meaning that people give to a word, concept, or symbol (Maguire, 1973).

Results

Differences in reactions to all posters along each of the nine adjectives of the semantic differential scale displayed in Table 1 were tested using Analysis of Variance (ANOVA). Post hoc analyses, using the Scheffé test, were then performed in order to determine which differences in pairs of means were significant.

The first adjective of the semantic differential required the subjects to rate the posters along a continuum in an attempt to estimate how informative they were. There were significant differences between mean ratings of the posters ($F = 46.92$, $p<.001$). Post hoc comparisons revealed that two posters were rated more informative than the rest. The most informative poster, according to the respondents, was clearly the poster that showed ways in which individuals

Table 1
Semantic Differential Items Used in the Study

Informative	Uninformative
Emotive	Unemotive
Suggestive	Persuasive
Reassuring	Threatening
Effective	Ineffective
Offensive	Inoffensive
Good	Bad
Moral	Immoral
Decent	Indecent

Table 2
Significant Differences Between Mean Semantic Differential Ratings
Adjective—Informative/Uninformative

Mean	*Poster*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
3.56	1	- -							
3.52	2	NS	- -						
1.45	3	*	*	- -					
3.73	4	NS	NS	*	- -				
3.72	5	NS	NS	*	NS	- -			
3.60	6	NS	NS	*	NS	NS	- -		
3.84	7	NS	NS	*	NS	NS	NS	- -	
2.90	8	*	*	*	*	*	*	*	- -

*pairs of means significantly different at p< .05 level

could avoid contracting AIDS and moreover attempted to dispel misconceptions about the disease. The eighth poster showed a very timid looking adolescent staring at the viewer and was captioned "Stopping AIDS is up to you." It is possible that this poster was considered informative because it stressed personal responsibility in preventing the disease. No other pairs of posters were rated as being significantly different. The results appear in Table 2.

The second semantic differential item required the sample to rate posters according to whether they felt that they were emotive or not. There were significant differences between mean ratings of the posters (F=8.1, p<.001). Post hoc comparisons revealed that Poster 2, which showed two naked male chests touching each other, was considered to be more emotive than the posters emphasizing an informative approach, stressing personal responsibility or utilizing males, either individually or in groups, to promote condom use. The poster stressing personal responsibility in AIDS prevention was rated less emotive than the poster of a male reclining provocatively in bed urging people to use "safe sex." No clear differences emerge, but it appears the somewhat blatant sexual theme of Poster 2 may have prompted the relatively extreme evaluations. Explicitly depicted sexual contact is absent from the remaining posters. The majority of mean responses were not significantly different. The results appear in Table 3.

The third item of the semantic differential required individuals to rate the posters along a continuum as to how suggestive, as opposed to persuasive, they were. There were significant differences between mean ratings of the posters (F= 61.74, p<.001). Post hoc comparisons revealed that the third poster, which depicted how one could not contract the disease was rated as more persuasive than all the remaining posters. Poster 8, which showed an adolescent staring at the viewer and stressing personal responsibility in stopping AIDS, was rated as more persuasive than posters 2 and 4, which had homosexual themes, but was not considered as persuasive as the highly informative posters. Conversely, Poster 4, which depicted a semi-clad male in bed stressing the sensuality of safe sex, was rated as more suggestive than all the

Table 3
Significant Differences Between Mean Semantic Differential Ratings
Adjective—Emotive/Unemotive

Mean	*Poster*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
3.20	1	- -							
2.64	2	NS	- -						
3.60	3	NS	*	- -					
2.64	4	NS	*	NS	- -				
3.01	5	NS	NS	NS	NS	- -			
3.03	6	NS	NS	NS	NS	NS	- -		
3.32	7	NS	*	NS	*	NS	NS	- -	
2.91	8	NS	*	NS	NS	NS	NS	NS	- -

* pairs of means significantly different at p< .05 level

posters except for the one showing naked male chests. The results appear in Table 4.

The fourth item of the semantic differential required individuals to rate the posters along a continuum as to how reassuring, as opposed to threatening, they were. There were significant differences between mean ratings of the posters (F=79.66, p<.001). Post hoc comparisons revealed that Poster 3 was consistently rated as more reassuring than all the remaining posters. Poster 8 was rated as more reassuring than all the remaining posters except for that stressing the masculinity of using condoms (Poster 6). Poster 3 relied on a purely informative approach, whereas Poster 8 stressed personal responsibility. Poster 2, which depicted two unclothed males bodies, was rated more threatening than reassuring than all the posters except for Poster 7, which showed a group of males in bathing suits with their arms around each other and advocating use of the condom. The results appear in Table 5.

Table 4
Significant Differences Between Mean Semantic Differential Ratings
Adjective—Suggestive/Persuasive

Mean	*Poster*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
2.79	1	- -							
2.16	2	*	- -						
4.41	3	*	*	- -					
1.91	4	*	NS	*	- -				
2.40	5	NS	NS	*	NS	- -			
3.16	6	NS	*	*	*	*	- -		
2.64	7	NS	NS	*	*	NS	NS	- -	
4.11	8	NS	*	*	*	NS	NS	NS	- -

*pairs of means significantly different at p< .05 level

Table 5
Significant Differences Between Mean Semantic Differential Ratings
Adjective—Reassuring/Threatening

Mean	*Poster*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
3.41	1	- -							
4.40	2	*	- -						
1.82	3	*	*	- -					
3.60	4	NS	*	*	- -				
3.82	5	NS	*	*	NS	- -			
2.87	6	*	*	*	*	*	- -		
4.02	7	*	NS	*	NS	NS	*	- -	
2.75	8	*	*	*	*	*	NS	*	- -

* pairs of means significantly different at p< .05 level

The fifth item of the semantic differential required individuals to rate the posters along a continuum as to how effective the various posters were. There were significant differences between mean ratings of the posters (F=35.00, p<.001). Post hoc comparisons revealed that two of the posters were consistently rated more effective than the rest. The third poster in particular, which relied on a highly informative approach, was rated the most effective in comparison to all the other posters. The eighth poster, which emphasized personal responsibility, was also rated as more effective than all the remaining posters, except for Poster 6, which stressed the masculinity of using condoms. Poster 7, which showed a group of males in swimsuits was considered less effective than the poster that showed only one male and emphasized the masculinity of condom use. The results appear in Table 6.

The sixth item of the semantic differential required individuals to rate the posters along a continuum as to how offensive or inoffensive they were. There were significant differences between mean ratings of the posters (F=111.47,

Table 6
Significant Differences Between Mean Semantic Differential Ratings
Adjective—Effective/Ineffective

Mean	*Poster*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
3.69	1	- -							
3.84	2	NS	- -						
1.90	3	*	*	- -					
3.68	4	NS	NS	*	- -				
3.53	5	NS	NS	*	NS	- -			
3.22	6	NS	NS	*	NS	NS	- -		
3.87	7	NS	NS	*	NS	NS	*	- -	
2.64	8	*	*	*	*	*	NS	*	- -

*pairs of means significantly different at p< .05 level

Table 7
Significant Differences Mean Semantic Differential Ratings
Adjective—Offensive/Inoffensive

Mean	*Poster*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
4.08	1	- -							
2.40	2	*	- -						
5.42	3	*	*	- -					
3.09	4	*	*	*	- -				
3.17	5	*	*	*	NS	- -			
4.57	6	NS	*	*	*	*	- -		
3.18	7	*	*	*	NS	NS	*	- -	
5.43	8	*	*	NS	*	*	*	*	- -

*pairs of means significantly different at p< .05 level

$p<.001$). Post hoc comparisons revealed that the third and the eighth posters were consistently rated more inoffensive than all the other posters. These posters were, respectively, highly informative and stressed personal responsibility. Poster 2, which depicted two partly naked males, was rated as being significantly more offensive than all remaining posters. The results appear in Table 7.

The seventh item of the semantic differential required individuals to rate the posters as to how good or bad they were. There were significant differences between mean ratings of the posters ($F=78.19$, $p<.001$). Post hoc comparisons revealed that Poster 3 and Poster 8 were considered significantly better than all the other posters, but there was no significant difference in ratings between these two posters. Poster 3 was highly informative, whereas Poster 8 stressed personal responsibility. Poster 2, which depicted two partly clothed men, however, was considered worse than all of the other posters except for posters 5 and 7. Poster 5 showed Michaelangelo's *David* and clearly relied on humor to convey its message. This may have led to the poster being perceived as fairly innocuous. Poster 7 showed a group of males at the beach. The results appear in Table 8.

The eighth item of the semantic differential required individuals to rate the posters along a continuum as to how moral they were. There were significant differences in the mean ratings of the posters ($F=128.23$, $p<.001$). Post hoc comparisons revealed that the third poster, which was highly informative, and the eighth poster, which stressed personal responsibility, were consistently rated as more moral than the rest. The difference in ratings between these two posters, however, was not significant. Poster 2, which depicted two naked males, was rated significantly more immoral than all the other posters. The results appear in Table 9.

The final item of the semantic differential required individuals to rate the posters along a continuum as to how decent they were. There were significant differences in the mean ratings of the posters ($F=131.16$, $p<.001$). Post hoc comparisons were then performed. The third poster utilizing the informative approach and the eighth poster which stressed personal responsibility were

Table 8
Significant Differences Between Mean Semantic Differential Ratings
Adjective—Good/Bad

Mean	*Poster*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
3.40	1	- -							
4.30	2	*	- -						
1.69	3	*	*	- -					
3.74	4	NS	*	*	- -				
3.76	5	NS	NS	*	NS	- -			
2.88	6	NS	*	*	*	*	- -		
4.07	7	*	NS	*	NS	NS	*	- -	
2.23	8	*	*	NS	*	*	*	*	- -

*pairs of means significantly different at p< .05 level

rated consistently more decent than all of the remaining posters. No significant differences were noted between these two, however. Poster 2 which showed two naked male bodies was rated as being more indecent than all of the remaining posters. The results appear in Table 10.

Discussion

The significant differences noted between semantic differential ratings for different posters suggest that the overall content, message, and design of educational posters has an important bearing on the subjects' reactions to them. The sample generally reacted most positively to two posters: The first was highly informative, highlighting possible myths about AIDS; the second stressed personal responsibility for prevention of the disease. These two posters were significantly and consistently rated as more effective, decent, moral, informative, persuasive, and reassuring than the remaining posters. Conversely, a poster that depicted two naked male chests touching and ad-

Table 9
Significant Differences Between Mean Semantic Differential Ratings
Adjective—Moral/Immoral

Mean	*Poster*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
3.29	1	- -							
4.51	2	*	- -						
1.75	3	*	*	- -					
3.86	4	*	*	*	- -				
3.77	5	NS	*	*	NS	- -			
2.65	6	*	*	*	*	*	- -		
3.93	7	*	*	*	NS	NS	*	- -	
1.82	8	*	*	NS	*	*	*	*	- -

*pairs of means significantly different at p< .05 level

Table 10
Significant Differences Between Mean Semantic Differential Ratings
Adjective—Decent/Indecent

Mean	*Poster*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
3.08	1	- -							
4.45	2	*	- -						
1.63	3	*	*	- -					
3.90	4	*	*	*	- -				
3.86	5	*	*	*	NS	- -			
2.62	6	NS	*	*	*	*	- -		
3.78	7	*	*	*	NS	NS	*	- -	
1.72	8	*	*	NS	*	*	*	*	- -

*pairs of means significantly different at p<.05 level

vocating use of the condom was consistently perceived as less effective and more immoral, shameless, and threatening than remaining posters.

The factors influencing the use of AIDS information are complex (Gerrard & Reis, 1989). Clearly one cannot determine whether these evaluative responses translate into behavior change per se, but the results suggest that the type of message that educational stimuli convey may warrant more careful consideration in planning educational strategies than concern for individual differences within target groups. This is a finding that needs to be investigated further, particularly in light of the fact that comparisons of the means of male and female responses to the posters along all semantic differential levels using Multivariate Analysis of Variance (MANOVA) generally failed to yield statistically significant differences.

Different target groups may also react differently to different posters. In the context of this study it would be reasonable to assume that the sample consisted largely of heterosexuals who appeared to react negatively to stimuli that depicted homosexual lifestyles or activities. As the stimuli became more blatant, so did the strength of the reactions. Yet, as noted, gender differences were not found. This evaluative component appeared to influence perceptions of the posters, most importantly for this study, along a number of dimensions that were identified by the Australian National Advisory Committee on AIDS (Spurgeon, 1988) as barriers to absorption and behavior change. Given that the majority of the sample fell between the ages of 20 to 24, and that they may reasonably be assumed to be sexually active (Health & Welfare Canada, 1989), this sample may prove a particularly useful group to study.

Addressing the uniqueness of individuals' AIDS decisions is an essential component of effective communication (Fischhoff, 1989). Effective education programs may require matching specific target audiences with appropriate educational materials. Yarber (1988) and Stevenson and DeBord (1988) note that factual information is not as important as behavioral and affective education in eliciting behavior change. This may be related to factors such as reactions to stimuli. It may be difficult to distinguish between factual and affective components in education, because the former may be a component of the

latter. In this study the sample clearly appeared to prefer factual material when presented with educational stimuli, but even more apparent was the existence of strong emotional reactions to all the posters. This latter finding warrants further investigation. Most importantly perhaps, the results of this study suggest the messages on educational stimuli may need to be evaluated in field settings before being adopted for widespread use. Semantic differential methodology appears to hold promise as a means of evaluating responses to educational stimuli.

Thus, although much can be learned through attempting to understand the nature and interaction of both micro level and macro level factors in AIDS education, this study emphasizes the need for further research to determine the efficacy of different posters or educational materials on specific individual samples before using them. Once this is done the materials can then be incorporated into comprehensive and multifaceted community-wide or school-based programs in order to provide the most effective primary prevention interventions.

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Formal Schooling and Deculturation: Nursing Practice and the Erosion of Native Communication Styles[1]

This study describes one particular example of how modern formal education decultures North American Native students. It documents how instructors in a nursing degree program employ teaching methods that induce Native students to adopt medical practices that are not only contrary to, but that also conflict with their distinctive ways. Native student practice of the scrutinizing conventions that are sanctioned by the medical profession preempt their unique ways of communicating. Furthermore, the wider societal context with which they live encourages them to adopt these ways of interacting in situations outside of medical settings.

Cette étude présente un exemple particulier de la manière dont l'éducation formelle moderne aliène les étudiants Indiens de l'Amérique du Nord. Elle décrit comment les enseignants d'un programme de diplôme d'infirmiers emploient des méthodes d'enseignement qui incitent les étudiants Indiens à adopter des pratiques médicales qui non seulement s'opposent à leurs propres manières, mais aussi sont en conflit avec elles. La pratique par les étudiants Indiens des conventions d'examen qui sont sanctionnées par la profession médicale empiètent sur leurs manières de communiquer. En outre, le contexte social plus large dans lequel ils vivent les encourage à adopter ces modes d'interaction dans des situations en dehors des milieux médicaux.

Educators and social scientists interested in the formal education of Native (and minority) students have been preoccupied over the past two decades with finding ways to improve the success rate of these students.[2] But while the acquisition of skills that accompany success is certainly important to Native people, efforts that are designed exclusively to discover those conditions that impede (or enhance) mastery of these skills overlook other significant by-products of schooling. Indeed, as we have been told, formal education produces effects other than those which are found in official school policies (Apple, 1979; Bowles & Gintis, 1976; Giroux, 1983). This article describes a study of one of these so-called unofficial features of schooling: its role in the deculturation of North American Native people.[3]

Schooling and Deculturation

While use of the term *deculturation* may seem inappropriate to some in this day and age, particularly when employed to characterize Canadian education, it has proven to be a useful concept in analyzing and describing the role of

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education in the spread of European culture throughout Asia, Africa, North and South America in the 17th, 18th, 19th, and even into the 20th century. Carnoy (1974), Altback and Kelly (1978a), and Walsh (1991), for example, recount how Europeans, and later the United States, used Western formal education as part of a planned strategy for extending their domination over the colonies which they were claiming for themselves.[4] According to these authors, these nations saw education as performing two important functions. First, formal schooling was to train the indigenous people of these colonies for roles—invariably subordinate—that suited their colonizers. Second, these schools were to engender in these people an allegiance to a particular and very different political, economic, and moral way of life. Central to these efforts was a move to "civilize" indigenous people, that is, to introduce them to a way of life that resembled that of the Europeans. As Carnoy (1974) maintains, education sought to achieve these ends by degrading "the local 'savages' or 'heathens' into believing that one must be European to be good, strong, able and right" (p. 26). In other words, these colonizing nations used formal schooling as a tool to convince the native people of Asia, Africa, North and South America of the superiority of Western ways and of the advantages that could be accrued from the practice of these ways. A key ingredient then, of education as a form of deculturation was its role in displacing the indigenous culture with another culture by providing the conditions that would propel students to accept and to practice this alien culture.[5]

Europeans, and then Canadians, followed this prescription in their dealings with Canada's Native people.[6] Examples abound of official pedagogical efforts at so-called civilization.[7] Perhaps the most extreme and tragic example is the case of Canada's residential schools.[8] Children bound for these institutions were rounded up, forcibly removed from their families and communities, shipped off to distant schools where they were forbidden to speak their Native tongue, placed on rigid schedules, and taught those skills that their educators felt would permit them to integrate into the dominant culture. While not all Native people were subjected to such treatment, many did attend schools where the curriculum featured exclusively elements of European-based culture, and where teachers adopted tactics implicitly and explicitly geared to convince students of the superiority of this foreign culture and of the advantages of learning skills that had virtually nothing to do with their own culture.

Attitudes toward Native people and Native culture have changed over the past century, however. Residential schools are now a part of history and the integrity of minority (including Native) culture is enshrined in the constitution of the land and in official policy.[9] Despite this fact, however, formal schooling continues to champion Western ideals at the expense of distinctive Native practices that still persist today. Although explicit declarations to this end are not to be found, formal schooling continues in more subtle ways to provide conditions that propel Native students not only to take up Euro-Western ways that are often diametrically opposed to Native practices, but also as a consequence of this acceptance, to forsake elements of their own cultural heritage.

This article outlines a study that documents one particular modern-day instance of this process. More specifically, it describes how the inquisitorial

nature of the communication etiquette required of nurses and nursing students takes precedent over distinctive Native modes of communication that are fundamentally at odds with the former. It shows how elements of a university-based nursing program prompt Native nursing students to adopt and eventually accept ways of communicating that preempt their distinctive ways. Toward this end, I first describe the methods and setting. Next, Native communication etiquette is outlined followed by a portrayal of modern medical communication practice. Finally I describe the means nursing instructors employ to instill these medical conventions in these Native nursing students and the effects these tactics have on these students.

Research Setting and Methods

The study described here focuses on a four-year university-based nursing degree program, and in particular on the 30 Native nursing students who attend this program. These students, all of whom are women save two, vary with respect to age, previous education, work history, and family status, and with the exception of a handful have traveled from communities in the more northerly regions of Canada to attend this on-campus program. All students except one have passed through the one-year preparatory year—now in its fifth year—that was designed to prepare individuals of Native ancestry for the challenges they would face in the degree program.

The research team retrieved data over the course of a university calendar year by scanning various documents and by watching and talking to people in the qualitative research tradition (Bogdan & Biklen, 1982; Woods, 1986). Pertinent documents included course outlines and course and reference material. We also sat in on a number of classes and observed various aspects of classroom interaction. Finally, we conducted in-depth interviews with all Native nursing candidates and instructors. What we looked for and asked about was initially structured by a broad theoretical framework that centered on *support* (Falk & Aitken, 1984; Jeanotte, 1982; Kulig, 1987; Lin, LaCounte, & Eder, 1988), *cultural differences* (Deyhle, 1983, 1986; Dumont, 1972; Greenbaum, 1985; Guilmet, 1981; Philips, 1972, 1983) and *identity* (Cummins, 1986; Dawson, 1988; Luftig, 1983; Ryan, 1989). We initially hoped that information related to these three areas would yield insight into the ways in which these students approached their studies. During the interview sessions, however, we did give instructors and students the latitude to pursue areas they felt were relevant. As the study progressed, and various findings were checked and cross-checked, various themes emerged, including the issue of conflicting communication styles. Once these themes were established, we zeroed in on related issues, searching out documentary sources that would shed light on them, looking for them in the classroom, and asking both students and instructors pointed questions about these topics. Finally, after the all data were collected and written up, I asked various participants to comment on the manuscript. A number of their insightful suggestions were incorporated into this manuscript.

Native Communication Etiquette

Many Native North Americans continue to communicate with one another in ways that differ substantially from the face-to-face interaction commonly

employed by most people of European descent.[10] In order to be properly understood, however, these communication patterns need to be set within the traditional social context in which they were originally practiced. Indeed, conventions associated with communication etiquette were, and to an extent still are, intimately tied to traditional practices of social control, practices that differ markedly from modern Western forms of control. Northern nomadic hunting societies, for example, displayed uniquely egalitarian characters.[11] In other words, these people lived without the formal hierarchical structures that pervade Western culture today. They valued personal autonomy and the right to make decisions about those things that mattered most in their lives. Northern Native people were quite comfortable about others making their own decisions because of the deep abiding trust they had in one another. Ridington (1988), for example, maintains that

> the individualism of Northern Indian people is based on a fundamental social compact, a trust in the individual's social responsibility and informed intelligence. Northern hunting people trust the individual to be responsible, not only to him or herself, but to all other humans and trans-human persons. (p. 107)

The control, then, that one person had over another was decidedly limited within these societies. Efforts to directly influence another or to penetrate in any way another's person space were simply not tolerated.[12]

Although the social context in which many Native people live has changed over the past two centuries, many of these people still retain elements of these traditional values. Philips (1972, 1976, 1983), for example, illustrates how these values continue to influence the communication patterns of the Warm Springs Native people. The issue of control, she claims, plays a central role in the way these people interact with one another. Unlike most Anglos, Warm Springs people who find themselves in the role of listener do not attempt to control the length of the speaker's discourse, nor when they speak, do they strive to set up who will speak next. Indeed, in most cases, the address of the speaker is so general that a response, immediate or otherwise, is not required. People speak up when they are ready. Intrusive actions such as gazing at another, demanding a reply to a query, or asking personal questions constitute inappropriate acts of control and as such are insulting to those to whom these acts are directed, as they violate the fundamental trust that many Native people have in one another. These conventions, however, differ from the communication etiquette sanctioned by the medical profession. Even so, as we shall see, all but a handful of the Native nursing students identified strongly with these Native ways of interacting.

Medical Observational Practice

A central feature of modern medical practice is its preoccupation with what Foucault (1973) refers to as "the gaze," the perpetual and unrelenting scrutiny of patients by medical professionals. At the heart of these pervasive observational practices is an overriding concern to see all, and thereby to know everything there is to know about the patient.[13] While the medical practice of observation is not new, as those familiar with Hippocrates will recognize (Frede, 1990), it took on a central role, according to Foucault (1973), around the end of the 18th century with the reorganization of medical practice and train-

ing. At this time medical professionals adopted more probing, penetrating, and insistent scrutinizing practices that allowed them to diagnose forms of diseases that were now characterized not by essences—as had been the case until this time—but by the visible symptoms that showed themselves in human tissue. But since doctors could not see past the surface skin tissue, they had to figure out what was not immediately visible to the eye. In other words, they had to foresee what dissection would reveal. To accomplish this task they had to employ means other than simple observation, and found themselves engaged in the arts of listening, touching, and questioning, practices that continue to this day. In sum, medical practice revolves around a phenomenon that is totally alien to traditional Native culture, the laying bare of individual men and women before an intrusive and persistent gaze.

Nursing Practice

Nursing practice, as a form of medical practice, also sanctions the art of probing. Indeed collecting information or what both instructional manuals and instructors refer to as "data", constitutes perhaps the most important element of nursing. Griffith and Christensen (1982), for example, maintain that "data collection is the foundation of the nursing process" (p. 29). Observation, as well, is central to this art of data collection, and has been for some time. Florence Nightingale (in Bradley & Edinberg, 1982) is reported to have told her nursing colleagues that "if you cannot get into the habit of observation one way or another, you had better give up being a nurse" (p. 29). In a modern-day appraisal of observational techniques Bradley and Edinberg (1982) contend that "Observation is the sine qua non of nursing. Nurses primarily obtain information about clients in two ways: they *listen* to what clients tell them, and they *observe* objective signs and symptoms" (p. 29).

Because of the importance that the nursing profession accords to the acquisition of information, those who teach prospective nurses give priority to equipping these people with communication skills that will allow them to perform this task. In fact, most nursing instructors in this particular program believe that appropriate communication skills are essential to nursing. Marion, a veteran instructor, maintains that "if you can't communicate so that people can understand, errors can be made, people can die." Margaret, another instructor, outlines the vital connection between communication, information gathering and the helping relationship.

> *If we can't communicate then we can't gather data. If you can't gather data, you can't figure out how you can help. Therefore all the skills in the world aren't going to help if you don't know what's the matter.*

Appropriate communication, at least as it pertains to nursing, requires that the nurse establish a relationship with the patient that will induce him or her to reveal all. One particular technique favored by nursing manuals and instructors involves the projection of "warmth behaviors." This method has proven to be attractive to many nurses because, as Smith (1986) contends, "clients who sense your warmth are more likely to engage in dialogue with you and provide you with the information about their health condition you need to make a nursing diagnosis" (pp. 48-49). Nursing instructors attempt to get their charges to become proficient in projecting those warmth behaviors

that would lead patients to believe that the attending nurse is a warm and caring person, and that it would be in the patient's best interests to confide in this nurse. Madeline, a nursing instructor, elaborates on those traits that she believes project a caring image.

> *We're talking about people whose face indicates that we really like talking to you. We're smiling, eyes that look interested, eye contact, open posture where we're indicating that "Yes, I think you're really important, and I'm willing to listen to you." So we use a lot of this warmth behavior. We try and encourage respect by calling the person by his or her name, giving them the time, giving them the response when they're asked. We look at things like empathy, being able to put yourself in that person's position, if only for a moment, and share with them that you understand, but that requires a response. We talk about nonverbal skills that indicate warmth, like holding someone's hand.*

In sum, the nursing profession requires that those who practice its tenets take an inquisitor's stance toward patients. Those who employ these methods believe that a relationship of this sort will allow the nurse to wrest information from the patient that will eventually assist the medical professional in making a prognosis.

Instructing Nursing Students

Nursing instructors in this program employ a number of instructional techniques to ensure that student nurses acquire the attitudes and skills necessary to extract appropriate information from patients. They address these skills both in seminar sessions where up to six students are in attendance, and in actual health care facilities. In most cases these instructors review the skills in the seminar session, and students attempt to put what they have learned into practice in placement settings. Students generally participate in various exercises and complete assignments that are designed to sharpen their information gathering skills. One assignment requires students to tape an interview session with a patient, transcribe it, analyze it, and hand it in to their instructor, who in turn offers suggestions. In the seminar session, instructors may also plan activities that depart from the customary discussion or lecture format. One popular exercise involves a series of audiotapes. Activities associated with these tapes include, for example, having students (a) listen to a fictional patient talk, (b) write down what they believe to be the "correct" meaning of these utterances, (c) and then discuss with classmates and instructors strategies for discerning these correct meanings. Another popular strategy is role playing. Instructors introduce students to contrived situations that require one student, who plays the role of the nurse, to pursue a line of questioning that will lead him or her to elicit certain information from the other actor, who plays the role of the patient. Comments and advice are generally offered both by participants and observers after the performance. Remarks from one such session included, for example, such statements as "it was inappropriate to talk loud," "I didn't use open-ended questions," "I felt I was firing questions," "be accepting about receiving information," "remember it is important to listen," and a comment that most Native students would identify with, "I need more help in probing."

This last observation by one of the Native students reflects the difficulty that many of these students have adopting conventional nursing communica-

tion patterns. Indeed, most Native students are very uncomfortable, at least initially, as they are pushed to take an inquisitor's stance. Janice, a Native student, tells us, "I had a hard time at first because I'm Native and pretty shy by nature." Jill, on the other hand, draws a connection between her cultural heritage and the difficulty she has doing some of the things that are required of her by her instructors.

> *The Native people are very shy. I guess we are brought up like that, and there are even different ways of body posture. Like we're not allowed to look at someone's eyes, for certain periods of time. The nurse will say, "Okay, when you're talking to someone, look at their face." But for us that's not our belief. We always have to put our heads down or bow our heads. That's what I was taught. It's a behavior that was taught when we were very small and is part of our culture. To some people (non-Natives), it's as if we're ignoring them. But to us, it's out of respect.*

All instructors are aware that most Native students have problems employing these practices. They cite their lack of aggression and assertiveness, traits that show up, for example, in their unwillingness to look into patients' eyes or to ask direct questions. As one Native student told an instructor, "I wouldn't ask those kinds of questions of my grandmother, so why would I ask them of somebody I don't even know?" Mary Ann is only one of many instructors who has noticed that Native students "feel a little reluctant to go in and ask the appropriate questions, and therefore to get the appropriate data base that's required." Another instructor says that "they're not assertive. If the client is busy or the curtain [around the bed] is closed, they're very careful about not asserting themselves." Although most instructors recognize and appreciate the unique ways in which many Native students interact with others, they nevertheless feel that it is their obligation to see that they master conventional nursing communication techniques and forgo elements of their cultural heritage. Maureen, perhaps more than most instructors, realizes what is at stake here. She states that

> *The expectation here is that they will communicate as we do. I have to say that they have to learn that they cannot communicate [in their distinctive ways].... I think I can appreciate the way Native people communicate, but I have to teach them to communicate [as a] generalist. So they have to change.*

Because many Native students have difficulty stepping into the role of inquisitor, instructors find they must take extra or unusual measures to ensure that these students do not employ their distinctive interactive practices either in the classroom or in hospital wards. Instructors may feel a need to intervene at times. This happened in one particular situation where two Native students were involved in a role play. This role play, however, took on a different character than the previous interchanges. Unlike the exchanges that had already taken place, the two women, playing the respective roles of nurse and patient, did not launch into an immediate dialogue. Instead both of them sat facing each other without uttering a word. Time went on, and still nothing was said. They eventually began to display their discomfort, twisting in their chairs, occasionally glancing at the walls, ceiling, and floor, and generally avoiding the eyes of the other. After a full two minutes had passed, the instructor intervened, exhorting the women to speak. Finally, after another

pause of a shorter duration, they began. After the class the women approached the instructor and told her that they were reluctant to begin not because they were uneasy about performing in front of the class, but because they felt it was inappropriate for either of them to invade one another's space by initiating an intrusive dialogue. For the instructor their silence was unacceptable, and she felt she had an obligation to put an end to it, regardless of the fact that she personally had a great deal of respect for Native culture. In the end she felt that these practices were simply out of place in this particular setting.

Other instructors prefer other tactics in dealing with students' reluctance in these matters. Margaret, for example, prefers to set up a role play situation in which just she and the student are present. She feels that some students may be more willing to practice when there are no spectators. Mildred, on the other hand, insists on asking reluctant students rhetorical questions to rationalize their participation in probing efforts. She says "I ask them why they are here. I then answer that we are here to learn and that they should try and work around the lack of assertiveness." Finally, Mona feels that acknowledging their feelings will assist students in overcoming their discomfort. Asked what she says to these students, she replied,

> *I say something like, "How do you feel when you are in a room with a patient and you are getting ready to ask questions? What are you feeling?" ... I think recognizing feelings is a very important part in overcoming these obstacles.*

Inevitably, however, most students overcome their reluctance and embrace this role, at least to a point that satisfies their instructors.[14] Indeed, they have little choice in the matter: they must conform or risk failure. Conforming, however, is not an easy matter. June, for example, says that "when we entered the program the coordinator told us we had to mesh the Native and non-Native ways. It's really hard to." Furthermore, being placed in an environment that favors social practices that are diametrically opposed to those valued by one's own cultural heritage can prove troubling to students in other ways. Jillian believes that "the teachers think there's something wrong with a Native student because they don't talk, or they don't communicate [in ways that teachers expect]."

Discussion

Although popular opinion may support the notion that Western societies have progressed a long way from the days when Europeans forcibly imposed their culture on peoples from other parts of the world, the deculturation process that was an integral part of these colonial ventures persists today. It continues to show itself in many forms, including educational institutions that cater to students whose cultural heritage differs from those of Euro-Western descent. Today, however, it works in more subtle ways. But although it may not be part of a planned strategy, modern-day deculturation nevertheless works to replace one set of cultural practices with another, extending the domination of the latter over the former through schooling practices that both implicitly and explicitly convey the supposed superiority of Western ideals. This process negates not only the culture of these subordinate groups, but also their history and sense of self.

Modern-day deculturation is not a uniform or determinant process. It does not, to cite a familiar phrase, work itself out behind the backs of men and women. Rather, intelligent human beings are part of this process: they make choices day in and day out that produce and reproduce these dominant relations. The case described here illustrates just one instance of how deculturation works itself out on a daily basis in an educational setting. As we have seen, different instructors employ different means to equip Native nursing students with the skills they believe are essential to the profession. But although various instructors may employ a wide variety of tactics, they all have one thing in common: an unquestioned allegiance to, and belief in, the inquisitorial method of attending to patients. The superiority of this exclusively Western practice is a fact that is taken for granted by all instructors, and they take great pains to ensure that Native students develop the skills associated with it, even though its employment negates the Native students' own cultural practices. Even those instructors who have an understanding and appreciation of Native communication etiquette will press the issue with students because apart from their commitment to these practices, they believe that acquiring such skills will inevitably be in the students' best interest.

On the other hand, student acceptance of inquisitional relationships with patients is neither automatic nor uniform. Many students resist, at least initially, those tactics instructors use to get them to accept and to adopt these practices. For many Native students, especially those who are close to their historical roots, deciding to employ these skills is no easy matter, for learning them involves much more than, say, learning to ride a bicycle. This process is emotionally charged. Making up one's mind to look someone straight in the eye for sustained periods of time, or asking a personal question of a patient means that a Native student must in some way acknowledge the superiority of these practices over Native ways of communicating. This confrontation of cultures is much more direct than, for example, would be case of simply not teaching traditional Native healing practices, and as a result can be more painful for a Native person whose sense of self is ultimately tied to this way of life. Indeed the negation of these distinctive practices is accompanied by a negation of the self of each of those Native students who feel at least some attachment to their heritage.[15]

But is this particular instance an isolated event? In other words, one might ask, wouldn't Native students simply do what they had to do in the classroom and the health care setting to satisfy instructors or their professional duty, and then revert to their distinctive ways of communicating in other settings? To answer this question, we must acknowledge that the dismantling and replacement of Native ways with Euro-Western practices does not happen in isolation. The imposition of inquisitorial relationships goes on side by side with the imposition of other dismantling Euro-Western practices, both in educational institutions and out, which both reinforce and build upon one another. The individualism that pervades Western institutions, including education, provides a case in point. These individualizing practices work with other related practices to break down the distinctive Native communal orientation to life (Ryan, in press). They also constitute but one of many sorts of practices that provide conditions that prompt Native students to employ inquisitorial

techniques in their interaction outside of these institutions. Indeed these questioning techniques come in handy in a society where men and women are dealt with, and are forced to deal with others, on an individual (as opposed to group) basis.[16] In such circumstances one must be prepared to step forward to both elicit and provide information to a wide variety of individuals on whom one depends for the essentials of life. Unlike traditional Native times when people had greater control over their own destinies and were considered first and foremost a part of a group, living in the dominant Western culture now requires that they elicit and supply information on an immediate basis to such people as doctors, teachers, colleagues, bosses, shopkeepers, lawyers, civil servants, repair people, bureaucrats, social workers, and police officers, among many others. Although at times learning the rudiments of this communication style may be a difficult process, these ways of relating to others nevertheless help Native nurses to get along in a world that requires that they engage in these sorts of interactions. As such, most are quite willing to make use of these new skills in contexts other than nursing situations.

Conclusion

Many Native people today find themselves in an uncomfortable situation. On one hand, many look on with disfavor as they see their cultural heritage slowly slipping into the past, a consequence of, first, the depletion of game animals, among other resources, that at one time sustained their ancestors, and, second, the overwhelming nature of Euro-Western forms of life that are slowly but surely dismantling what is left of their relationship to the past. On the other hand, Native people are put in the awkward position of being compelled to contribute to this process of deculturation. Indeed, doing the things they must do to survive in this imposed environment requires that they forsake not only the more visible elements of their past such as clothing or hunting rituals, but other fundamental conventions of their heritage that are not as evident to non-Natives, such as ways of interacting with one another. Formal schooling typifies the contradictory nature of this process. While formal education may provide Native students with skills that help them get along in the dominant society, these same skills also contribute to the erosion of distinctive Native practices.

What, then, is to be done about this state of affairs? Do Native people have no other recourse than to stand powerlessly by and watch their cultural heritage slip into the past? If alternatives to current practices are to be found, they will hinge on Native control of Native institutions, including schools. Only when Native people have the right to decide, without intrusive government intervention, how they will live their lives, will they be able to make substantive and meaningful changes to current institutional practice. Control of this nature will enable them to critically analyze, evaluate, and appropriate elements of current practice that will best serve their needs. Such revered institutions as medical science, or individualism and related practices that surface in schools, for example, need not escape intense scrutiny.[17] Such scrutiny will in turn assist Native people in deciding which established conventions are worth keeping and which are best discarded. There is an urgency in this task, however, for if not enacted in the near future, there will come a day when Western thought and practice has become so ingrained in Native

people that many may not have the will to do what has to be done to arrest, or at least alter, the process of deculturation.

Notes

1. Funding for this study was provided by Indian and Northern Affairs Canada (INAC).
2. Typical of these efforts is the ongoing dialogue in *Anthropology and Education Quarterly* that has included Cazden (1983), Ogbu (1987), Erickson (1987), Trueba (1988), and Foley (1991), among many others. The debate has centered on whether interactive or structural factors, or a combination of both, constitute the more powerful explanation for minority student failure and success.
3. It is recognized here that although the majority of Native people in Canada do not practice their traditional culture as their ancestors once did, a consequence in part of the deculturation process that began 500 years ago, many of them still retain elements of this heritage despite the fact that such practices might not be all that evident to non-Native observers. As Erickson and Mohatt (1982, p. 166) contend, it is "precisely because of the presence in everyday life of modern dress, cars, outboard motors, television sets, and fluency in English that these relatively subtle aspects are likely to go unrecognized." And while these less obvious ways of life may well not be "original" or "authentic" dimensions of Native culture, they remain distinctly Native in character (see, e.g., Ryan, in press).
4. Walsh (1991) gives us an illuminating look at how the United States attempted to use education to peacefully colonize Puerto Rico, a prize it had acquired in the Spanish-American war.
5. Altback and Kelly (1978b) maintain that Europeans never really did intend that colonial schools would enable the colonized people to integrate into their society. What integration there would be was intended to be marginal and to serve the needs of the colonial power.
6. The situation of those Native people living in Canada changed from one of classical to internal colonialism (Altback & Kelly, 1978b) as the descendants of Europeans (i.e., Canadians) took control of the land.
7. An account of early efforts at educating Native people can be found in Thwaites (1906) and Jaenen (1986). Iverson (1978) provides a sampling of pedagogical efforts to civilize American Native people over a 350-year period. Finally, for an account of similar efforts in the 1950s on the part of Canadian government officials see Ryan (1988). These efforts, as have most other efforts of this sort, have met with little success from the vantage points of both Native and non-Native parties.
8. See, for example, Persson (1986).
9. Mock and Masemann (1990), for example, found that 69 of 129 Ontario school districts either have ethnocultural equity policies or are in the process of developing them. The Canadian Charter of Rights and Freedoms states that all individuals are "equal before the law without discrimination based on race, national or ethnic origin, colour, religion, sex, age or mental or physical disability."
10. I do not mean to imply here that all North American Native people are the same, a belief promulgated by the colonial European powers, among others. North America is populated by a wide range of aboriginal people who differ in many respects. Some common themes, however, transcend tribal boundaries. This was the case with the notion of social control and communication etiquette. Both northern hunting societies and the more southerly Warm Springs people, for example, displayed marked similarities with respect to these conventions. Furthermore, I felt justified in using these examples because many of the Native nursing students I interviewed identified with the northern people and their ways of communicating.
11. See, for example, Henrikson (1973) and Mailhot and Michand (1965).
12. Ridington (1986, p. 105) draws a distinction between the egalitarian societies of these northern people and the Western system of social hierarchy. He says that "in such an egalitarian society the authority of individual judgments requires respect for individual autonomy and nonintervention, while in a system of social hierarchy individualism is viewed as the mechanism by which some people gain the power to intervene in the lives of others."
13. The relationship of patient and doctor differs considerably from the relationship that many Native people once had with one another. In modern medical practice the medical professional assumes virtual control over the patient, a situation that would not have been possible in many Native societies.

14. One student who was not entirely comfortable with asking point-blank questions would, if at all possible, wait for the patient to tell her what she was there to find out. She said, "You have to approach them indirectly, so that they tell you what they have.... You let them speak."
15. Cummins (1986) draws a relationship between identity and the success of minority students. He maintains that young people who are not positively oriented to their own culture or to the dominant culture, who perceive themselves as inferior, and who are alienated from their own cultural values generally do not succeed at the process of formal schooling. For other statements on the impact of formal schooling on identity and self-image, see Luftig (1983), Dawson (1988), and Ryan (1989).
16. For a description of the origins of the individualizing practices of modern-day society, see Foucault (1979).
17. Ehrenreich (1978), for example, contends that factors other than personal medical care have been responsible for the reduction in morbidity rates. According to him, better standards of living that include housing and nutrition and selected environmental factors such as appropriate water supplies and sanitary services have played a more important role in the improvement in health levels over the past century. But while most Native people live longer today than many of their ancestors, the state of their mental health has deteriorated at an alarming rate. To cite an example typical of many northern areas, 43 young people in 28 isolated northern Ontario communities have taken their own lives over the past five years (Sanders, 1991).

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Principals as Instructional Supervisors

Since recent literature on excellence in schools stressed the positive effect that principals can have on quality instruction, instructional supervision has received renewed emphasis in writings on school administration (Owens, 1991). Principals are expected to empower their staffs, to enhance commitment to student learning, to spend a major part of their day improving the instructional program, and to expand opportunities for teacher growth. At the same time principals are required to evaluate teachers and monitor programs. As Pajak (1990) has noted, "Instructional supervision, clinical supervision and classroom observations of teachers by administrators are virtually synonymous in the minds of practitioners" (p. 78). The study reported in this article explored eight principals' understandings of instructional supervision.

Puisque la littérature courante concernant l'excellence dans les écoles a mis l'accent sur l'effet positif que les directeurs peuvent exercer sur la qualité de l'enseignement, la supervision pédagogique a connu un regain d'intérêt dans les écrits sur l'administration scolaire. Les directeurs doivent donner du pouvoir à leur personnel, accroître la responsabilité envers l'apprentissage des élèves, passer la majeure partie de leurs journées à améliorer le programme d'enseignement, et augmenter les occasions propices au développement professionnel des enseignants. En même temps, les directeurs ont l'obligation d'évaluer les enseignants et de contrôler les programmes. L'étude présentée dans cet article a exploré les vues de huit directeurs au sujet de la supervision pédagogique.

Instructional Supervision

Interest in the topic of instructional supervision in education has inspired considerable research and resultant literature. Oliva (1984) identified three themes prevalent in the writings of specialists on supervision: (a) a focus on the behavior of supervisors, (b) in assisting teachers, (c) for the ultimate benefit of the student. There is general agreement among writers that the focus of instructional supervision is the enhancement of student learning. Where writers differ is in the ways they suggest instructional supervision should be practiced. Some writers emphasize the role of the supervisor. For example, Wiles and Bondi (1986) defined supervision as "a general leadership function that coordinates and manages those school activities concerned with learning" (p. 10). Smith and Andrews (1989) identify four roles that they see as essential aspects of an instructional leader: resource provider, instructional resource communicator, and visible presence. Other writers (e.g., Glickman, 1985;

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Smyth, 1988) stress the importance of the involvement of the teacher in the process. In a recent work Sergiovanni (1987), building on the work of Costa and Garmston (1985), presented a reflective practice model of supervision in which he proposed that since teachers vary in their goals and learning styles, supervisors should be responsive to these differences in the ways they supervise.

> At the heart of this view of supervision is the notion that teachers have work goals that are important to them. Given the opportunity, they will work very hard at achieving them. The nature of these goals is influenced by growth stages, cognitive complexity levels, learning styles, and motives that teachers bring to school. Supervisory options and styles should respond to these differences among teachers, for such responsiveness makes it easier for work goals to be realized. (Sergiovanni, 1987, p. 225)

Yet, despite the general agreement among writers about a definition of instructional supervision, researchers have found that principals vary in the ways they describe their work as instructional leaders.

Through data gathered in a year-long study of several outstanding principals (Dwyer et al., 1985), Dwyer (1986b) learned "that there is no single image or simple formula for successful instructional leadership" (p. 15). Instead, each situation had to be understood in the context of the community and the aspirations of the principal.

> The studies allowed a very different concept of leadership behavior of school principals to emerge. This concept is one that visualizes instructional leadership accruing from the repetition of routine and mundane acts performed in accord with principals' overarching perspectives on schooling. (Dwyer, 1986a, pp. 66-67)

McEvoy (1987), who examined the data from Dwyer's study to identify the ways principals exercised instructional leadership, stressed the importance of everyday acts of principals, especially informal talk, in promoting staff development. In comparing what was written about instructional leadership with findings from a number of studies, Morris, Crowson, Porter-Gehrie, and Hurwitz (1984) observed that "studies on what administrators actually do have discovered that principals spend relatively little time directly attending to teaching and learning" (p. 74) but concluded, "the principal's influence, though, may be more indirect, creating a favorable climate for learning: the most effective role may be supportive rather than supervisory or evaluative" (p. 74). This was confirmed in their own study and described in a section titled "Instructional leadership by indirection" (p. 94). Although these principals were not heavily involved in classroom observation and teacher evaluation procedures, they considered themselves to be instructional supervisors. Like the principals in Dwyer et al.'s (1985) study they had little difficulty in describing "their efforts to shape and form the content of instruction and color the ambience of their schools" (p. 4).

Research Methodology

Dwyer's (1986b) research provided a starting point for this study. The major research questions were: How do principals understand the notion of instructional supervision, and how do they put their understanding into practice?

The theoretical perspective of the study is based on a phenomenological understanding of interactions where the meanings that participants give to their actions are crucial in providing an interpretation of their activities. In this study, eight male principals from one large urban school system were interviewed in order to discover what these principals as instructional supervisors do. Although these principals were not considered representative of principals in their school district, they were chosen to include a variety of years of administrative experience and level of school. Each principal had been identified by a number of colleagues and senior administrators as being someone who had a positive reputation in working with teachers. One was a high school principal, three were principals of elementary-junior high schools and four were elementary school principals. While two had less than three years of administrative experience, the remainder had been principals for at least five years including two who had been administrators for over 25 years. When approached, all the identified principals were excited about being involved in the study, so all eight were included.

Data gathering strategies included nonparticipant observation and reflective interviews. Each principal was visited on between two and four occasions. The first half-day visit began with an observation period during which the researcher shadowed the principal and took brief notes as the principal carried on with the work of the school. There were two purposes for the observation. It provided a context for the interviews since the researcher and principal were able to refer to actual activities that grounded the discussion of instructional supervision. The observation period also helped the researcher become aware of the culture of the school. On the next visit to the school, the principal participated in a taped reflective interview. This interview was structured to explore the two research questions on the meaning of instructional supervision and the activities of an instructional supervisor. Within that format the principal provided the direction for the interview while the researcher listened, probed where appropriate, and tried to obtain concrete examples of the principal's actions. On average, interviews lasted at least two hours. These interviews were transcribed and returned to the participants for verification. The researcher met with each principal to ensure that the transcript was an accurate reflection of the conversation and there was nothing that, in retrospect, should be changed or discarded. During this taped conversation, the researcher also asked questions and sought clarification about statements in the transcripts.

Intensive readings of the transcripts led to the categorization of the data. Each principal's transcripts were read as a unit but considered separately from those of other respondents. The transcripts were analyzed in two ways. First, as the transcript was read, a category name was written in the margin beside each section where the topic was discussed. These sections could be a phrase, a sentence or a paragraph depending on the content. Then a second more detailed reading, line by line, and word by word, helped explore and identify more substantial topics, which were also labeled and written in the margins. When each respondent's transcripts had been analyzed, the category labels from all the transcripts were examined for similarities, and like topics were grouped together. This process provides a way of grouping the responses

while allowing for the diversity of responses under each topic. Once the data were written and returned to the principals, the researcher met with them and asked whether their understandings had been accurately captured in the description of the findings.

The Actions of Supervisors

Many of the principals described what they did as part of their response to what instructional supervision meant for them. They replied to the question about their understanding of instructional supervision with specific examples of what they did or tried to do. For them, their actions as instructional supervisors were both illustrative of and embodied their meanings of instructional supervision. Some had difficulty separating the definition from the action. As one said in a tone of frustration, "Instructional supervision? It's everything I do!" This entanglement of purpose and action became one characteristic of these principals' understanding of instructional supervision. The principals described numerous ways in which they acted as instructional supervisors, and these responses have initially been organized according to four broad categories: setting and maintaining expectations; providing resources and support; observing others and being observed; and encouraging the involvement of others. Within each category, the diversity of responses by the principals is displayed.

Setting and Maintaining Expectations

For many of the principals this activity started at the beginning of the year or when they arrived at a school as its new principal. They felt that the development of a school philosophy or vision, either alone or in concert with staff, was an essential foundation from which the instructional activities of the school would evolve. For example, one principal recalled that for him:

> *The opening two days of school are probably the most important two days of the whole year. And so you plan to the nth degree for those two days to make sure that the staff realizes, "Hey, this is our focus. This is where we're going, this is our vision for the school, these are our priorities." You know, our objectives are set from those and then, I think people understand.*

Two principals talked about being new to their schools and reinforced the importance of establishing "mission statements" as a first task. As one pointed out:

> *We began as a staff, right from the very beginning, to adopt a statement of beliefs. I did not even want to start off the school year without the adoption of a statement of beliefs, in that I believe that schools must be student-centered. In sharing that with the staff, what does that mean? And so that we begin the school year with that focus, so that at any time during the year, if there is a problem or concern, we can address it in terms of meeting student needs and in that instruction involves all areas and aspects of student involvement, then in which way can we make the instructional component supportive to student needs?*

A new elementary school principal stated, in regard to his first year, "and so we had to spend a lot of time to come up with some sort of vision statements. What is our curriculum supposed to do for our kids?"

The acceptance of the mission statement by staff was seen by principals as being crucial to their effectiveness as instructional supervisors. The willingness of the teachers to "buy into the mission of the school" was viewed by many principals as being of utmost importance. The adoption of a single school philosophy provided a common focus for all staff members and allowed them to work together in a supportive manner. One principal concluded:

> *Well, things that help you be an effective supervisor, naturally, are that the staff that adopts the philosophy or mission of the school or indeed a philosophy or mission similar to the one that you've talked about. In other words, making kids feel good about themselves so that you're offering the best curriculum and the best delivery that you can with what you have, and if everybody's headed in that direction, then your job is 10 times easier, absolutely. You have to work with good people. You can't work in a vacuum. So the staffing component is ultra, ultra important.*

Principals saw this as being much preferable to a situation where there was not a shared mission as these situations had great potential for conflict and non-cooperation.

As well principals viewed healthy principal-teacher relationships as being invaluable to the enhancement of instructional supervision. One principal stressed the importance of teachers' attitudes toward the principal and saw great benefits result from "the general staff willingness to have me in the classroom." Another respondent described the difficulties resulting from poor communication between principals and their staff:

> *If the communication lines are not open because you're new in the school or because of lack of trust, then information that should be coming to you doesn't come to you. Or it comes to you at a time when things are already very bad. You see, you're constrained by your own access to information, for one thing.*

Recognizing the importance of good teacher-principal relationships, principals worked hard to establish these relationships. The importance of interpersonal relations was stressed by one principal whose strategies were "supportive listening, by remaining visible and approachable, by attempting to break down barriers and by letting them know that you have feet of clay."

Another form of clarifying goals and expectations occurred at an individual level. Three of the principals mentioned having held conferences with individual teachers at the beginning of the year, where the teachers had an opportunity to describe their own goals for the upcoming school year. At this time the principal would provide feedback and reinforcement to the teacher and also ensure that the teacher's goals were in some way linked to the mission of the school. One principal emphasized the importance of individual teacher growth:

> *So, in meeting with the teachers, I ask them to come up with at least one personal goal that would look at growth in regard to student centeredness. Therefore, over the course of the year, they are going to be making their classrooms a little bit better in terms of the instructional involvement that they have with students. I, as a school principal, may also request one school goal of them, which I shared with them in terms of growth. It has to do with growth.*

In describing their actions, principals stated strongly that instructional supervision was not something that just happened. It required initial thought, and then planning, organizing, and commitment in its undertaking. One principal in particular talked about organizing and planning on a school-wide basis.

> *Organization, planning, just the organization of the building, has to do with instructional supervision. All of those organization for instruction type things, timetables, have to do with instructional supervision.*

Although they tried to set expectations at the beginning of the school year, the principals recognized that this was insufficient in ensuring that they were followed throughout the year. Instead they actively monitored situations and where necessary intervened both positively and negatively to reinforce expectations. The positive reinforcement might be in the form of a note, or they might drop into a class and give a teacher words of praise for fine work. On the other hand, direct confrontation might have to be used to let the teacher know that "I cannot accept this." For example, one principal described a situation where a teacher yelled at a student and told the student to "shut up!" In reviewing the incident with the teacher, the principal made it very clear that treating students in that manner was not consistent with the established school goals. Another principal described a situation where he had to approach a teacher directly about her teaching methods. In this case, the teacher was using worksheets exclusively and this was not consistent with the school's approach to the teaching of language.

For these principals, instructional supervision was grounded in the purpose of the school, which had been agreed to by the staff at the beginning of the school year, but it was also constantly monitored and sustained through formal structures such as timetables and programs and informal discussions with teachers about what was happening in the school and what was appropriate.

Providing Resources and Support

Principals referred to a variety of ways in which they attempted to facilitate the work of teachers and the instructional process. As one principal stated, "I can't deliver curriculum but I do know that I can facilitate people who have ideas." In addition to the provision of materials and assistance, principals were willing to offer resources of a different kind. Support for the teachers was a primary way principals felt that they could assist teachers, and it included listening, providing extra time, and showing appreciation to teachers. One principal described a type of psychological and resource support that would reassure teachers that they were not alone when they were involved in some sort of change:

> *What you must provide them with is a tremendous backup of resource, advice, assistance, consultation, and so part of the model here of making change is to see that no staff member would be left with the feeling that they are by themselves in terms of understanding either their involvement with students or how to make more supportive involvement and change with their students. I operate on the basis that whatever advice, assistance, support, materials you need, you will get.*

One of the most immediate ways this could be done was by ensuring that teachers had the required materials available:

> *I think you have to make sure that the teachers have the tools to do the best job that they can and again, that'll vary with the school you're at and the people that are in the building as to how much of a priority you make that.*

Two of the principals referred to the act of allocating money as being a component of instructional supervision. One explained that budget allocations reflected whether the principal was more interested in capital acquisition than education.

Principals were also very willing to share their instructional expertise with the teachers but recognizing that they were not and could not be experts in all fields, they made arrangements to involve specialists, other teachers, or consultants. As one interviewee explained,

> *I say to the teacher, "Allow me to understand the student's concern and what you have got planned for him." I don't come to the teacher as the expert. I believe that the teacher knows more about the student's specific needs and concerns than I do.... I can offer some suggestions that I might have, but then I say, "I don't want you to worry about this. Help is on the way." The district has an abundance of support in consultants, specialists, materials.*

Time was also recognized as being a valuable resource for teachers. Principals described covering classes for teachers so that they could visit other schools or attend inservices. They would also bring in substitute teachers to enable their teachers to work on program development:

> *You bring in a half-day sub for the elementary teacher who's agreed to take on the junior high kids and develop a program. Give her half a day to do some curriculum development and clean up in the art room, get it organized, get ready, consolidate.*

Listening to teachers was described as being an important form of support. One principal referred to it as temperature taking:

> *Outside of that, to take the input that they give and listen to them, in the same way that you listen to kids. This just came back to mind as one of my philosophical approaches—the temperature taker. As an instructional leader, you're taking temperatures. There are all sorts of things you're taking the temperature of. Sometimes you ask people to take that temperature and feed the conditions back to you. If they run into some hot spots, well then they're to let you know about those.*

Principals also wanted teachers to know that they were valued and that their efforts were appreciated. This support might take the form of a personal note to the teacher, or as one principal described,

> *Sometimes it's not so much a direct comment as it is an action that you take that lets them know that they're valued. It might be a comment in assembly, it might be a direct one-on-one, it might be a suggestion that lets them know that they're pretty important.*

Two principals talked about creating a more conducive environment for instruction. In the first instance, the principal was referring to the physical environment of his school and described modifying open-area classrooms to make them closed classrooms and soundproofing rooms. In the second instance, the principal was referring to the school culture and described his task

as ensuring an appropriate standard of discipline to allow his teachers to teach:

> *Teachers in our schools are there to teach and if I can as principal create for them a climate which makes them more comfortable in meeting their daily challenges, then they will succeed instructionally. A most important aspect of instructional supervision is ensuring that the school climate is healthy. Teachers cannot be expected to be "policemen" and teach effectively at the same time. The principal, if need be, must assume the policeman's role in order that good instruction may be effected.*

Besides the role of disciplinarian, this principal also saw himself as a facilitator:

> *Through open and constructive communication these things that concern teachers and affect climate—poor student behavior, nonproductive use of time—become a responsibility of the principal. He is responsible for removing obstacles from teacher paths and helps teachers enjoy themselves and their work in the classroom.*

These principals thought that providing resources, materials, money, and time as well as access to consultants to their teachers was important. Equally important were everyday acts of listening, encouraging, suggesting alternatives, and of sustaining the school culture.

Observing Others and Being Observed

All the principals in this study mentioned that formal classroom observation was of primary importance in their role of instructional supervisor. However, the purpose of their involvement and the amount of time allocated to this activity varied with each principal. Many of the principals described the numerous demands on their time and varied widely in the time given to formal classroom observation. Those who placed priority on being in the classroom to see "what's happening," made a point of planning their visitations and writing them down. As one principal noted, "There's a lot of demand on principals' time. If you're going to do instructional supervision you've got to write it on your calendar." Although principals varied widely in the time given to formal classroom observation, all were involved in informal drop-ins as part of their daily walks around their schools.

To one principal, instructional supervision primarily meant "getting a sense of, feel for, instruction ... that the teachers are involved with the students." Accordingly, he ensured that "I am in everyone's classroom at least once a week. So that over the course of the year, I will be able to have a minimum of at least 40 to 50 visits with each teacher."

The school district required principals to write a number of formal teacher evaluation reports every year, and some of the principals made specific classroom visits for evaluation. For example, this is how one principal differentiated between a performance review and an evaluation. "Performance review, for myself, is a process of growth which means that everyone, regardless of whether they're a first-year teacher or have been in the field for 30 years, that each year is a year of growth."

However, if during a review visit the principal saw something he was concerned about, then, he considered it an evaluation which included the question of competency and the aim was to bring about necessary improvement:

The evaluation can take place at any time. The first day of classes or the last day of classes. But if a teacher interacts with a student in a way that is not supportive of our goal of student centeredness, then I will evaluate on the specifics of that involvement. That is separated from his performance review in terms of growth. If I question the academic program or the pro-social skill program that the teacher is involved in, with the student, then I will take that up specifically.

Another principal who similarly did not have separate evaluative classroom visits also arranged to observe teachers on a regular basis, but qualified that he would "always have some kind of focus determined" before the classroom visitation.

The focus would usually come out of an inservice activity that we were undertaking as a group. We may have been working on enhancing questioning skills or lesson design or some kind of a teaching strategy to do with peer teaching or something like that. And then with almost a contract between myself and the teacher, I would go in and give them feedback related to the skills or the strategies that we'd been talking about in the inservice, for example. But there were two sides to that contract. The other side was that the teacher would design a lesson in which they could demonstrate those skills.

Sometimes he would visit some teachers more than others and

Interestingly enough that was often because of a request from a teacher. And again usually related to something going on at an inservice. They knew that their next scheduled observation wasn't going to be until a month from now. They were working on something and they felt good about it and they wanted to share it so they invited me in to observe and we would do that.

One principal thought that one of the roles of an instructional supervisor was to be an effective model and strongly emphasized the importance of being a demonstration teacher. Being seen teaching served two purposes. It developed credibility with the staff and also enhanced the relationship with teachers by showing that the principal was "not perfect":

I don't think a principal can exercise instructional leadership unless they can demonstrate that they are also excellent teachers. So while I didn't have any formal regular teaching assignments, I did a lot of teaching. Very often with the teacher observing and later we could talk about what kinds of lessons were taught, teaching strategies, teaching skills—those kinds of things. So that's one role that I think is sometimes overlooked when you talk about instructional leadership and supervision in the school and that is the role of model.

Another principal, while acknowledging that teaching a class would make him a better curricular leader, felt that with all of the interruptions that were inherent in his job as principal, it would not be beneficial for the students to have him as their regular teacher. Unlike his colleague he did not seek out opportunities to provide demonstration lessons.

Other principals talked about less formal ways of visiting classrooms. In these informal visitations, the principals, in a sense, were not only observing, but were also being observed. They talked about "being visible" or "management by walking about." They explained that it let teachers and students know that they were interested and it also gave them a sense of what was happening in their school. They sought specific information when they

entered classrooms and some considered that principals should also be able to model teaching in order to encourage quality instruction.

One principal described how he took over the classroom duties of his teachers to allow them to observe another teacher. He saw this as being beneficial in two ways:

> *It conveys a belief in the professional competence of your staff. You're saying that you know that the teacher has the ability to give some feedback. I'm not the only one. It also demonstrates to the teacher that you know enough about real life circumstances because you're taking their class and that you're actually working with them.*

Another administrator relieved teachers for personal matters and viewed it as an opportunity to gain a sense of the classroom without the teacher being present:

> *You walk around and see what units teachers are working on, whether that's math, whether that's social studies.... and you will see what's on the walls, you'll see their plans, you'll see what is actually going on in the classroom so that you have a better knowledge of what really each teacher has.*

An informal approach used by a principal of a large high school, was to "be in classrooms a lot," but not with the purpose of evaluation. He did this to provide public support for the importance of classroom instruction to teachers and students. He depended on his department heads to "stay close to the day-to-day operation" and created a faculty council that met weekly to assist him in keeping in touch with what was happening throughout the school.

While all these principals thought it was important to be observed in classrooms because such visits stressed for students and staff the importance of instruction, only three made regular extended visits to classrooms in order to observe teachers and provide feedback on their teaching. Instead, most "popped in" to classrooms for brief periods on a fairly regular basis. Nor were they unaware of the difficulties in deciding on what actions should be taken when they had concerns about the instruction they observed. Although they had well developed district policies that they followed in the event of a major problem with classroom instruction, they were more hesitant in situations where the situation was less clear cut. As their conversations indicated, principals were constantly balancing their concern for the educational experiences of specific students and the concomitant necessity to insist that the teacher improve his or her instructional practices, with their desire to introduce specific changes to the work of the school and their need to have widespread staff support for the initiative. They were acutely aware that if they identified a teacher as "requiring improvement" they might well lose the positive regard of the remainder of the staff.

Encouraging Teacher Growth

One way principals chose to involve teachers was to develop strong professional development programs. One principal stated, "I feel that professional development is very important. That's where a large part of our budget is set aside." He described the importance of teacher involvement in a district program with an emphasis on enhancing teaching effectiveness. He recognized that it was expensive but felt that the benefits of discussing aspects of the instructional process with other colleagues were well worth it and noted that

everyone on his staff at present was involved with the program in some form. All the other respondents indicated some degree of involvement with this program. Many of them used it as a basis for their observation of teachers or to help clarify what teachers should be doing in the classroom. When describing his expectations of teachers, one interviewee said, "We're really teacher effectiveness people. We believe in it and we're always involved."

Another form of professional development used in one school was an extensive weekly program based on the model advocated by Joyce and Showers (1980). It involved an extended working day for the teachers four days per week to allow for early dismissal of the students on the day chosen for a professional development activity. The principal described the cycle of teacher involvement as: understanding a skill, demonstration of this skill, practicing the skill in a safe setting, and taking the skill into the classroom and practicing. His primary role in the process was providing coaching and feedback to the teacher practicing the skill in the classroom. He also attempted to free other teachers to perform the coaching role as well.

In addition to these school-based approaches to professional development, principals encouraged teachers to seek personal and professional growth. As one principal pointed out,

> *Part of my responsibility as an instructional supervisor is to see that the staff are stretched. Staff have to understand that their capacities are not finite. I do believe that it is my job to help them discern and rediscover talents, strategies, methods, and materials at these times in their endeavors when they feel that they have done their best and can do no better.*

Approaches mentioned were encouraging teachers to attend inservices, keeping the staff informed about professional development opportunities, having consultants come out to the school, freeing teachers to visit other teachers in their classrooms, or giving teachers on staff opportunities to share ideas with other staff members.

Encouraging the Involvement of Others

Principals actively pursued the involvement of others in the process of instructional supervision. To share some of their workload and at the same time involve and encourage knowledgeable people on staff, principals would delegate responsibilities. Two of the principals mentioned involving their assistant principals in the supervisory process. One principal mentioned that the involvement of his assistant principals allowed him the additional advantage of being able to work on "creative curriculum":

> *Having two assistant principals is a tremendous advantage to me. They each have their own particular areas.... So, from my point of view, it provides me with a tremendous channelling of responsibility and frees me to get involved in creative curriculum.*

Another principal delegated responsibilities to staff members to harness their skills and knowledge and to stimulate their professional growth:

> *Well, one thing is to take a look at each of the areas and delegate those responsibilities to other people. For instance, in the science area, to look at Steve and hold him accountable, in a sense, to review programs and to add to programs to make science a focus for this year for our budget process. So that's a leadership step. In other areas like health and*

phys. ed., to give Donna a task to find out what the resources are that are available within the school, relative to the list that's available to us—to see where the needs are. Doing that stimulates everyone to look at the curriculum and I guess what I'm saying there, again it's part of philosophy, is that you can't do it all yourself. It's impossible.

He emphasized that it was impossible for a principal to be knowledgeable in all of the curricular fields and while "You're certainly responsible for it ultimately," he considered it essential to build on the skills and expertise of others.

The involvement of others was not exclusive to teachers. Parents and the greater community and support staff were seen as being an important part of the instructional process as well:

As part of our statement of beliefs, you will recall that it says that the responsibility for teaching children lies with parents, teachers, and significant members in the community as well. And when we take a look at the instructional part, let's take a look at language arts. I don't expect the owner of the local Mac's store to be assisting Johnny with his reading skills, but I do expect the parents to be involved in that. When it comes to the area of pro-social skills, appropriate use of language, I believe that the teachers must assist Johnny in the appropriate use of language during school, the parents must teach Johnny the appropriate use of language in the home, and Mr. Owner of the Mac's Store must also assist with the appropriate use of language from Johnny when Johnny is in his store or in the community.

Another principal described involving parents in his school by having them assist teachers in the classroom and by making them a part of the school budget process.

Principals involved assistant administrators in formal evaluation procedures, and teachers in program responsibilities in their areas of expertise. Some involved parents and community members in helping sustain the work of the school.

Reflections

The four preceding categories presented the actions described by principals when they were asked the general question of how they acted as instructional supervisors. For these principals, instructional supervision encompassed much more than direct observation of teaching episodes. The work of the seven principals in the studies of Dwyer et al. (1985) was codified into nine categories: goal setting and planning; monitoring; evaluating; communicating; scheduling, allocating resources, and organizing; staffing; modeling; governing; and filling in for an absent teacher. All these activities were mentioned in this study. But the seven principals in Dwyer's case studies, like those in this study, gave meaning to these activities in differing ways through the articulation of "an overarching perspective of their school settings" (Barnett, 1986, p. 176). This perspective is usually referred to as culture, the values, beliefs, norms, rituals, ceremonials, and symbols that spell out the ways things are accomplished in an organization (Firestone & Wilson, 1984).

This perspective is also evident in this study. Underlying the categories is the notion of developing and sustaining a culture whose expectations would be the heartbeat of the school, one that would be sustained through talk and the everyday acts of the participants, hence the importance of the opening

activities when both a climate and specific philosophy were developed. The translation of the philosophy into a set of standards provided another means by which school members could judge their activities and was a ready reference point during discussions with them. Instructional supervision, therefore, was embedded in statements about the expectations for the teachers' orientation to children and curriculum. Having made such goals public, some principals also had teachers delineate their own expectations, shaping these through private conversations about the teacher's professional growth. Principals spoke about their expectations and how they were developed. The way they described their views reflected how they saw their purpose and role.

One principal stressed that staff should "adopt the mission" similar to the one he had outlined. Others talked about staff "adopting a statement of beliefs," or of needing teachers to "buy into the mission." Two principals talked about working with staff to "come up with" a vision, while one administrator emphasized the link between vision or mission and what happened in the school. He felt that he had "to make sure the staff realize.... our objectives are set from those." These quotes reveal that each of these principals had goals for education that were important to him. They also reveal how the principals went about involving their staffs in obtaining support for these goals and concurrently, the linkage of authority and communication in the culture of that school.

Another facet of culture was made manifest when these goals were monitored. Both by casual walkthroughs and detailed observations, the principal's presence was a visible reminder of the "contract," the stated goals or mission statement that teachers had supported. These findings confirm those of Dwyer (1984, 1986b) and Lee (1991) who found that principals attempted to shape their schools to fit a educative philosophy with which they were comfortable by shaping the meanings staff gave to their work.

Yet although these principals spoke about but did not name the development of a school culture, their use of words such as *buying* or *adopting* raise questions about the rights and responsibility of the principal in the process. For a number of these administrators it was sufficient that they design the mission statement that teachers would, by compliance or cajoling, adopt. Only two principals talked about spending time with their staffs to develop a statement of beliefs. Hence underlying the seemingly similar statements about strategies from the principals in this study, were profound differences in philosophy. While some principals stressed the instructional, educative function of the school and the importance of involving teachers as professionals who had expertise and expectations about how schools should be, other principals were more concerned with a school where there were clear expectations and benchmarks that could be used to monitor classroom instruction indirectly.

Important to some principals was the confirmation of their expertise through teaching, giving workshops, providing feedback on teaching skills, or providing advice about classroom situations. Such activities provided another forum through which principals sought to influence instruction. This area has received most emphasis in the recent literature especially in relation to ensuring that principals are competent in observing and assessing classroom in-

struction. The various reasons these principals had for popping into classrooms reflected the extent to which they saw themselves as experts and their greater concern over the need to sustain a cooperative, supportive school culture.

Greenfield (1986) analyzed the culture of one of Dwyer's case schools and identified three dimensions of the principal's work: social, moral, and technical. The social dimension encompassed the interpersonal component of the principal's work. In this study, all principals used talk as their major medium for shaping what happened in their schools, a confirmation of Dwyer's (1986b) conclusion that "Communication accounted for the largest proportion of each principal's actions" (p. 15), and of Wolcott (1973) and Gronn's (1983) earlier work. Blumberg (1989) raises questions about the focus of principals' talk, commenting that in a review of studies on the principalship, he had found that:

> Talk was the stock-in-trade. But what the talk was about was mostly left unstudied. The question then becomes, what is administrative talk about? This is another way of asking, What is the content of the work of administrators? (p. 43)

For these principals, the conversations frequently revolved around listening, problem solving, advice giving, the provision of resources and time, the linking of consultants and teachers, the reaffirmation of quality, and, ultimately, the sustaining of the culture.

The second dimension identified by Greenfield (1986) was moral, which he explained as the decision between varying conflicting standards of goodness inherent in every action whether deliberately reasoned or automatically chosen. The principals in this study were very conscious that actions carried meaning about what was right and good in the school setting. One example was the principal who admonished the teacher who was rude, stating that it was not in accordance with the goals of the school. Yet principals were also called on to make difficult moral decisions about whether to intervene in a classroom where a teacher who was close to retirement was providing poor quality instruction; whether to assign poor teachers to noninstructional support positions, thereby depriving competent teachers of the opportunity; whether to challenge a popular but lazy teacher; or whether to risk alienating the staff and jeopardizing an important program change by identifying a teacher as needing "improvement." Like the principals in Dwyer et al.'s (1985) case study, the principals in this study chose to ignore those system directives about extensive classroom observation where they felt it was unwarranted.

Greenfield (1986) subdivided his third dimension, technical demands, into organizational and instructional. While the organizational demands related to planning, decision making, and goal setting are clearly evident in this study, the principals varied in the amount of time they allocated to the central instructional dimensions of curriculum development and articulation, and improvement of instruction. Some of this can be related to the grade level and size of the school, some to the principals' own admission that they were not curriculum or instruction experts.

Greenfield (1986) concluded:

> While concepts like instructional leadership, management, and administration dominate discussions, descriptions, and interpretations of the work of school principals, they provide little leverage on understanding the meaning of or even adequately describing the nature of a principal's actual work activities and behaviors. They are ambiguous concepts, and.... they do not adequately describe what principals actually do, nor do they help one decipher the meaning of those actions in a given context. (p. 130)

Similarly, Daresh (1991) revealed that, for him, principals acted holistically rather than in response to a set of tasks or procedures. The principals in this study did not view their supervisory activities as separate from their everyday activities as principals. In fact, it is this embeddedness that militates against instructional supervision having a discrete meaning for these principals.

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Saskatchewan Interns' Concerns at Three Stages of a Four-Month Practicum

The present study was undertaken to document the concerns of preservice teachers during a four-month practicum and to determine if the nature and intensity of concerns were consistent with the developmental sequence postulated by Fuller and Bown (1975). One hundred and twenty-five interns placed in schools during the winter of 1990 were the subjects for the study. Mean concerns scores for survival, task *and* pupil *clusters on the Intern Concerns Checklist decreased significantly during the internship. In keeping with Fuller's findings, survival concerns decreased most over time. In contrast to Fuller's findings, the present sample of interns had consistently greater concern for pupils and showed those concerns earlier in their internship than had subjects in earlier studies. The current topics and sequence for the internship seminars generally match the emerging concerns of interns, although there may be need for an earlier treatment of content related to* pupil *concerns.*

La présente étude avait pour but d'explorer les préoccupations des enseignants en formation pendant un stage pratique de quatre mois, et de déterminer si la nature et l'intensité des préoccupations étaient en accord avec les phases de développement postulées par Fuller et Bown (1975). Cent vingt-cinq stagiaires placés dans les écoles pendant l'hiver 1990 ont servi de sujets à l'étude. Les moyennes des scores pour les thèmes survie, tâche, *et* élève *du Intern Concern Checklist ont baissé d'une manière significative pendant le stage. En conformité avec les résultats de Fuller, les préoccupations concernant la survie ont diminué le plus. Contrairement aux résultats de Fuller, le présent échantillon de stagiaires a montré plus de préoccupations pour les élèves, et cela plus tôt durant leur stage, comparativement aux résultats des études antérieures. Les contenus actuels et l'ordre des séminaires de stage étaient, d'une manière générale, en accord avec les préoccupations des stagiaires. Cependant, il ya peut-être le besoin d'un traitement plus prématuré du contenu concernant les préoccupations au sujet des* élèves.

Faculty in the College of Education, University of Saskatchewan, are in the third year of intensive discussion and revision of their teacher education programs. As a central and unifying component of the programs, the four-month "extended practicum" or internship, which comes in the latter part of the programs, has been updated annually. Ideas from the published literature on effective teacher education practices and theoretical concepts about what

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constitutes a reflective practitioner (Richards & Gipe, 1987; Schon, 1987) are factors that are also being reexamined. In the review currently in progress, both theoretical and research-based views of how interns learn and develop during the four-month internship are being considered. Our own students are providing data to test existing theories of intern growth and to guide program changes.

One approach to monitoring growth during practica has been that of measuring changes in the concerns expressed by interns during the process (Fuller, 1969; Fuller & Bown, 1975). The term *concerns* can be characterized as the "anxiety or anxious sense of responsibility" that interns or beginning teachers feel as they are initiated into the profession. According to Fuller's formulation, although optimum levels of concern provide a natural impetus toward learning, excessive levels of concern are detrimental to intern learning and progress.

In her earlier work, Fuller (1969) postulated that beginning teachers progress through an initial preteaching stage in which they identify with their pupils and are not concerned about the specific demands of teaching. Teachers then proceed through an early stage of concern about *survival* and the specific elements of the teaching position, to a later stage of concern for the learning of their pupils. In her more recent conceptualization (Fuller & Bown, 1975) Fuller refined her original theoretical formulation to a three-stage progression of concerns. Stage 1 was characterized as the time of transition from student to teacher, when the cluster of student concerns relates to personal adequacy and survival as a teacher. The novice teacher then progresses to stage 2, in which the focus of concern is a set of teaching *tasks* that have to be mastered. At Stage 3, concerns of the new teacher are related to tailoring content to individual pupil needs, to responding to the social and emotional needs of pupils, and to being fair. In this developmental model, it is essential that the new teacher overcome survival concerns before it is possible to adequately address task and pupil concerns (Fuller & Bown, 1975). Griffin et al. (1983) noted that, besides these changes in locus of student concerns from survival to pupil, there are also changes in the intensity of student concerns within each of these clusters.

There is some evidence in recent research to support Fuller's (Fuller & Bown, 1975) conceptualization of a developmental sequence of teachers' concerns as a valid framework for monitoring student growth during internships. Holmes and Barbour (1988) conducted structured interviews with students after reviewing their ongoing progress records and journal entries. The authors concluded that during teacher preparation, greater attention needs to be given to the developing priorities and concerns of beginning teachers. Richards and Gipe (1987) reviewed reflective statements in interns' journals and reported evidence supporting the concept of a developmental sequence of intern concerns. O'Sullivan and Zielinski (1988), in studying the validity and reliability of a "stages of concern" checklist used with 92 fifth-year preservice teachers, found that the progression of expressed concerns approximated that of Fuller's developmental stages. Butler and Smith's (1989) interns had significantly different developmental concern levels as they progressed through their year-long internship, and Hall and Jones (1976), Loucks (1977), and Ryan

(1979) all found evidence of a sequence of developmental concerns for their subjects. Berliner (1988) and Bercik and Blair (1989) recommended that both intern education and evaluation should be provided in a manner consistent with the relevant stage of intern development. Studies by Sitter and Lanier (1982) and Zeichner (1984), however, did not provide support for the Fuller and Bown (1975) concept of a developmental sequence of intern concerns.

At the University of Saskatchewan the protocol for the extended practicum is predicated on an implied developmental model of intern competencies. Nevertheless, neither the stages of development nor the concerns of interns have ever been documented. Further, no research has been carried out to determine whether the sequence and content of the internship experiences correspond with intern needs and concerns during the process.

The objectives of the present study are to determine:

1. the actual concerns of Saskatchewan interns at three times during the extended practicum,
2. if the concerns of individuals and groups of interns change in a manner similar to that postulated by Fuller and Bown (1975), and
3. if the current sequence of internship seminar topics relates to the evolving concerns of interns.

The Saskatchewan Internship Program

The extended practicum at the University of Saskatchewan was developed over a decade ago and has been updated and refined several times over the years. At the present time it consists of two elements: a progression of effective teaching competencies expected to be learned by all students and a sequence of clinical procedures designed to provide daily supervision by school-based cooperating teachers. Monthly supervision is provided by College of Education faculty and staff. A detailed Internship Manual includes the philosophy, sequence of skills, and an overview of inservice and supervision activities for interns. Interns are also required to maintain daily Planning and Observation books, which are routinely reviewed by the College of Education supervisors.

A full-day internship seminar is held for all intern-cooperating teacher pairs during the first week of the extended practicum. Three subsequent seminars, conducted by college supervisors, are held at approximately one month intervals during the internship. The teaching competencies highlighted during the seminars are those considered of contemporary relevance for the interns' developmental stages. Between internship seminars, cooperating teachers provide daily clinical supervision of the competencies presented in the most recent seminar. The college supervisors provide between seminar rounds of clinical supervision for each intern. As well, they rely on the cooperating teachers' clinical supervision reports in the Planning and Observation book to judge the progress of each intern. An overriding objective of clinical supervision is to help the intern to reflect continually about his or her teaching.

The content of the internship seminars is sequenced to approximate the anticipated developmental needs and concerns of interns. During the first seminar the emphases are on: (a) the identification of professional attributes, (b) the establishment of a productive working relationship between intern and cooperating teacher, (c) individual and joint expectations of intern-teacher

pairs, (d) basic classroom management skills for interns and (e) lesson and unit planning and delivery. The second seminar is focused on extending the interns' repertoire of classroom management skills and on keeping accurate records of teaching progress during clinical supervision. In the third seminar, questioning and responding behaviors are featured, and the final seminar is focused on lesson presenting skills such as teacher clarity and enthusiasm. Issues related to the interns' two weeks of full-time teaching and to the final internship evaluation are also discussed at the last seminar. As has been mentioned earlier, since the program began no research data have been gathered to document either the implied developmental sequence of intern growth or the concerns interns have as they progress through the four-month internship.

Methods

Sample

The sample for the present study consisted of 152 elementary and secondary education interns placed by the College of Education for the spring semester, 1990. One hundred and three of the interns were females and 49 were males. Sixty-six were placed in rural schools and 86 in urban schools. Interns who subsequently dropped out of the extended practicum or who failed to complete one of the three administrations of the Teacher Concerns Checklist were dropped from the study. At the end of the extended practicum, complete data were available for 127 (41 males and 86 females) of the original sample.

Instrumentation

The 50-item Teacher Concerns Checklist developed by Fuller and Borich (1988) was used in the present study. It measures teacher survival, task, and pupil concerns and employs a Likert-type five-point scale ranging from (1) not concerned to (5) totally preoccupied. The survey prompts interns to recall and rate current levels of concern at each administration.

The Teacher Concerns Checklist (TCC) items were constructed from the actual responses to 1,359 open-ended teacher concerns statements and from items derived from factor analysis of the open-ended concerns' statements (Fuller, Parsons, & Watkins, 1974). The TCC has reliability coefficients of internal consistency ranging from .79 to .91 (N=335) and one-week, test-retest stability coefficients ranging from .77 to.87 (N-44) (Parsons & Fuller, 1974).

Through Varimax rotated factor analysis of the open-ended concerns of two additional teacher samples (N=1,028 preservice and 265 inservice; N=335 preservice and 345 inservice teachers), three factors, survival, task, and impact-on-pupil, received greatest weight. The three factors, survival, task, and pupil concerns, did load when McBride (1985) had the data from 30 physical education inservice teachers subjected to a maximum likelihood factor analysis. In order to establish the suitability of the Teacher Concerns Checklist for use with interns at the University of Saskatchewan, we initiated validation procedures with College of Education internship supervisors. All these staff had supervised interns four or more terms. Ten of these supervisors independently categorized the 50 checklist items as measuring either survival, task, or pupil concerns. Only items categorized by majority agreement of the 10 college supervisors were included. Ten items that either could not be

categorized or were categorized differently by a majority of the 10 "experts" were dropped and the 40 remaining items formed the survival, task and pupil concern clusters. Thirty-two of the 40 remaining items had also been validated through factor analysis at Western Montana College (Rogan, 1988).

Procedures

The revised (40 items) Teacher Concerns Checklist (hereafter called the Intern Concerns Checklist) was completed by interns during the first, eighth, and 16th weeks of the extended practicum. At the end of the first internship seminar the interns completed the Intern Concerns Checklist and provided demographic data on age, gender, program, college year, rural/urban placement for internship, rural/urban school from which each graduated, grade level of placement, area of specialization and average number of students in the assigned classroom.

Data Analysis

Mean subscale scores were calculated for all respondents for each administration of the Intern Concerns Checklist. Changes in mean scores over the four-month internship were assessed using a separate one-way ANOVA with repeated measures for each of survival, task, and pupil subscales (see Table 1). The SPSS program MANOVA was used to determine changes in subscale mean scores over time. It was also used to test the sphericity of the data and the significance of the differences between subscale means for each set of subscale scores.

Frequencies, percentages, and modes were calculated for survival, task, and pupil subscales of the Intern Concerns Checklist for each of the three administrations. Model scores for subscale clusters of the checklist were plotted to show changes in intern concerns (see Tables 2, 3, and 4). In order to assess the level of concern of interns on individual checklist items at the beginning, middle and end of the practicum, the researchers arbitrarily chose a model score of 4 as the minimum score to indicate significant concerns (see Tables 2, 3, and 4).

Results and Discussion

Intern Concerns Checklist Findings

Interns' mean ratings for survival, task, and pupil concern subscales at the first, second and third checklist administrations are presented in Table 1. Mean concerns ratings for each of the three subscales decreased significantly ($p>.001$)

Table 1
Mean Intern Concerns Subscale Scores by Time of Administration

	Time of Administration					
	1		*2*		*3*	
Concern Subscales	*Means*	*SD*	*Means*	*SD*	*Means*	*SD*
Survival	3.17	.61	2.67	.63	2.46	.68
Task	2.44	.50	2.26	.52	2.23	.61
Pupil	3.15	.59	2.98	.59	2.87	.69

N = 128

Table 2
Individual Concerns and Group Modal Concerns for Survival by Subscale Item

Survival Subscale Items	Time of Administration 1 Checklist Concerns[a] Modes	%	2 Checklist Concerns Modes	%	3 Checklist Concerns Modes	%
Getting a favorable evaluation	4	60[b]	4	42	3	34
Doing well when supervisor present	4	52	3	33	2	37
Accepted and respected by my peers	3	51	3	38	2	35
Maintain class control	4	50	3	48	2	36
Students who disrupt the class	4	48	3	41	3	38
Feeling adequate as a teacher	4	48	2	35	2	36
Being liked by students	2	42	1+2	37	2	39
Feeling under pressure	3	40	2	40	2	33
Clarifying limits of authority and responsibility	3	40	2	40	2	33

[a]N=127 respondents on the Concerns Checklist
[b]Percentage of respondents who chose the mode

during the 16-week internship. The specific results for each of the subscales were: survival $F(2,254)=93.54$, $p<.001$; task $F(2,254) = 12.78$, $p<.001$; pupil $F(2,254) = 15.04$, $p<.001$. O'Sullivan and Zielinski (1988) also found an overall decline in intensity of concerns between early and later measures of concerns among their undergraduate students.

Survival

Mean survival concerns decreased over time (see Table 1) more extensively than did task or pupil concerns. The modes and percentages of interns having survival concerns also decreased over time (see Table 2). The decrease in numbers of interns having concerns early and late in the internship can be seen in the percentage columns of Table 2. Initially 60% of the total number of interns had high concern for the survival item "getting a favorable evaluation," whereas at the final checklist administration only 34% of the interns had the same levels of concerns. These results are consistent with Adams' (1982) and Maxie's (1989) research and Fuller's theory that interns are initially concerned about survival factors but become less concerned about these factors over time. According to Maslow (1968), people (interns) will initially feel threatened and inadequate in their new situations before becoming comfortable enough to move on to other concerns. Maxie (1989) also speculated that the positive supervision practices of the cooperating teachers could be associated with the decrease in survival concerns of interns.

Being supervised, however, was not always viewed with favor by Saskatchewan interns. "Getting favorable evaluations of their teaching" was a highly rated survival concern both initially and at the mid-term of the internship. This concern may be an expression of changes in role status as interns moved from student to teacher.

Saskatchewan interns had initial high survival checklist item concerns about maintaining class control (see Table 2). This finding parallels that of Campbell and Green (1990) who found that their interns were initially concerned about classroom control and possible chaos during teaching. Fuller and Bown (1975) found that initial concerns about class control were most intense for their preservice teachers. Veenman (1984), reviewing 83 international studies, also identified classroom discipline as the most frequent problem of beginning teachers.

Task

Fuller and Bown's (1975) theory that concern for task is the second stage in the evolving concerns of interns is not supported by the mean concerns scores (see Table 1). There was little change in concerns for task between initial, midpoint, and final checklist administrations; however, interns were more intensely concerned with the task items: "increasing my proficiency in content," and "selecting and teaching content well" (see Table 3). These concerns may indicate a need for coaching interns to enable them to transfer from preservice theory and content to the specific realities of the daily classroom (Joyce & Showers, 1981).

Pupil

The significant concern for pupils, measured at the first checklist administration was unexpected (see Tables 1 and 4). Fuller and Bown (1975) did note that preservice teachers express deep concern about pupils' needs and about relating to pupils as individuals, but that preservice teachers' survival con-

Table 3
Individual Concerns and Group Modal Concerns for Task by Subscale Item

	Time of Administration					
	1		*2*		*3*	
Task Subscale Items	*Checklist Concerns*[a]		*Checklist Concerns*		*Checklist Concerns*	
	Modes	*%*	*Modes*	*%*	*Modes*	*%*
Too many noninstructional duties	1	65[b]	1	60	1	48
Presenting all required material	4	63	3	42	3	42
Ineffective staff meetings	1	62	1	55	1	50
Too many students in class	1	58	1	55	1	42
Inadequate assistance from specialized teachers	1	57	1	63	1	54
Working with too many students each day	1	54	1	51	1	45
Increasing my proficiency in content	4	51	4	43	3	34
Nature and quality of instructional materials	3	46	3	33	3	36
Too many standards and regulations set	2	46	2	40	2	42
Rapid curriculum and instruction change	2	44	2	36	1	41
Lack of freedom to initiate	2	42	1	46	1	50
Selecting and teaching content well	4	41	4	52	4	38
Lack of instructional materials	3	36	2	37	1	38

[a]N=127 respondents on the Concerns Checklist
[b]Percentage of respondents who chose the mode

Table 4
Individual Concerns and Group Modal Concerns for Pupil by Subscale Item

Pupil Subscale Items	Time of Administration 1 Checklist Concerns[a] Modes	%	2 Checklist Concerns Modes	%	3 Checklist Concerns Modes	%
Ensuring students grasp content	4	65[b]	4	41	4	42
Increasing students' feeling of accomplishment	4	63	4	54	4	59
Meeting needs of different students	4	59	2	40	4	43
Whether each student is getting what he needs	4	54	4	42	3	42
Challenging unmotivated students	4	53	3	46	3	38
Whether students can apply what they learn	4	52	3	42	3	50
Guiding students toward intellectual and emotional growth	4	52	4	38	3+4	34
Slow progress of certain students	3	52	3	46	3	42
Adapting to needs of different students	3	50	3	38	3	40
Helping students to value learning	4	50	3	41	3	40
Recognizing social and emotional needs of students	4	49	3	40	3	50
Wide range of student achievement	3	46	2	40	3	40
Diagnosing student learning problems	3	43	3	39	3	38
Being fair and impartial	3	41	4	34	4	31
Diversity of student ethnic and socioeconomic backgrounds	3	39	2+3	31	1	34
Chronic absence and dropout	1	32	1	34	2	33
Student health and nutrition	3	28	2	40	2	33

[a]N=127 respondents on the Concerns Checklist
[b]Percentage of respondents who chose the mode

cerns overshadow these pupil concerns until such teachers have learned to cope with survival tasks. They postulated that expressed concern for pupils is manifest in a final developmental stage. The high levels of concern for pupils in the early stages of internship means that the Saskatchewan interns were perhaps less preoccupied with survival than had been hypothesized. The greater initial concern for pupils may also have reflected a more pupil-centered preservice education program at the University of Saskatchewan than that experienced by the Fuller and Bown (1975) sample. It must be noted, however, that concern for pupils was still high at the end of the internship (see Table 1). This continued high concern for pupils offers some support for the position of Fuller and Bown.

Saskatchewan interns coped with survival concerns while maintaining a high level of pupil concerns throughout their internships. Interns continually wanted to "ensure that students grasped subject matter content" and to "increase the students' sense of accomplishment" (see Table 4). Because this sample completed internship in the winter term, cooperating teachers would already have known each pupil and have had classroom discipline established. If this information about pupils was shared with interns, it may have

influenced their early concern for pupils. Other researchers attribute high measured pupil concern to supervising teachers' modeling and to the fact that interns want to do what supervisors expect of them (Adams & Martray, 1980).

Demographic Items and Intern Concerns

When interns' concerns were analyzed according to demographic factors, class size and grade placement level were significant. Application of Chi-square revealed that, near the end of the internship, interns with moderate class size (16-25 students) had significantly stronger survival and pupil concerns ($p>.05$) than did interns with smaller or larger class sizes. Larger-sized classes would normally be presumed to increase interns' survival concerns. In this sample, however, the small number of interns with larger classes made comparison problematic.

Interns in middle years (grades 7-9) placements had significantly higher task concerns ($p>.05$) than interns in elementary school (grades 1-6) placements. This finding may reflect a lack of specific middle-years task emphasis during preservice education. There were no significant differences for groups on other demographic variables.

Internship Seminar Topics and Interns' Concerns

The third purpose of the present study was to determine if the current sequence of internship seminar topics is consistent with the emerging needs and concerns of interns. First, a comparison was made between the actual content of the seminars and the developmental sequence of interns' concerns postulated by Fuller and Bown (1975). Then a comparison was made of the actual content of the seminars and the expressed concerns of interns at the beginning, middle and end of the extended practicum. In reviewing the earlier presentation of the content and sequence of seminar topics (see the section on "The Saskatchewan Internship Program"), it seems clear that the seminar emphasis changes from an initial focus on survival skills to that of task by midterm and finally to a focus on the needs of the pupil. Although there appears to be a good correspondence between the actual content and sequence of the seminars and the theoretical concerns of interns, there remains the question of whether their expressed concerns on the Intern Concern Checklist are consistent with the content and sequence of seminar topics (see Tables 2, 3, and 4).

During the first week of the extended practicum students completed the Intern Concerns Checklist, which yielded modal scores of 4 for 5 of the 9 survival items, thereby providing corroboration for the early emphasis on survival skills at the initial seminar. Interns also provided modal scores of 4 for 3 out of 13 task items and for 8 out of 17 pupil items. As stated earlier, these expressed intern concerns for pupils so early in the practicum were not anticipated. Certainly the content of the first two seminars was not related to pupil concerns. One possible reason why the Saskatchewan interns were developmentally more advanced in their initial concern for pupils may have been that all of them had completed either a two- or three-week full-time round of practice teaching in the year prior to their extended practica. Because all of them had that background of experience, perhaps more content in the initial two seminars could have been devoted to interns' concerns for pupils.

At the time of the third internship seminar, only one of the survival items, "getting a favorable evaluation," had a modal rating of 4, while two of the task and five of the pupil items also had ratings of 4. The emphasis on task and pupil concerns in the third seminar seemed moderately relevant for these interns, since task concerns had already receded in significance for them. By the time of the fourth seminar, no survival concerns, one task concern, and five pupil concerns rated modal scores of 4. Because the content of the fourth seminar was mainly on lesson presenting skills and pupil concerns, it seems clear that the content was appropriately placed for the group, even though many of the earlier pupil concerns had dissipated.

Intern Concern Checklist items that persisted at modal ratings of 4 to the final seminar may require further attention. For example, the persistently highly rated task item "selecting and teaching content well" may indicate the need for further seminar content about lesson and unit planning or new seminar content about models of teaching.

Although there is strong evidence that the content and sequence of internship seminars are consistent with the theory of Fuller and Bown's (1975) developmental model, the evidence is more tentative when we consider interns' expressed concerns on the Intern Concerns Checklist. Apparently Saskatchewan interns are developmentally advanced in their concerns for, and perhaps readiness for, an earlier treatment of task and pupil related teaching skills. Perhaps greater consideration should also be given to making the earlier, short-term practice teaching experience an integral part of the developmental progression of intern growth.

Conclusion

Concerns of interns at the University of Saskatchewan cluster around the survival, task, and pupil categories postulated by Fuller (1969). Like Fuller's subjects, these interns experienced a strong initial concern for survival, which diminished over time. In contrast to Fuller and Bown's (1975) developmental theory, Saskatchewan interns had strong concerns for pupils initially and throughout the practicum. Such early concern for pupils may have been partly a result of prior student teaching experiences and partly a result of other unknown elements of the preservice teacher education program at the University of Saskatchewan. These findings are consistent with those of Hord, Rutherford, Huling-Austin, and Hall (1987), who noted that at any given time some degree of survival, task, and pupil concerns exist in beginning teachers during all stages of development.

Although the content and sequence of internship seminars is generally consistent with the developmental concerns of Saskatchewan interns, there is need to consider content related to pupil concerns earlier in the four-month progression. The mandatory two- or three-week practice teaching experience prior to the extended practicum may allow for a better rationalization of the current progression of seminar topics and content.

There is need to design a study in which Saskatchewan interns articulate their unique concerns three or four times during the Extended Practicum. Because the Saskatchewan sample of interns appears to be developmentally different from those of earlier studies, using the Intern Concerns Checklist

may be a limitation in such a study. Any Saskatchewan intern's concerns not reflected in the current 40 items of the scale will go unreported.

Alternative methods of collecting interns' concerns should also be considered. Interviewing interns, or having them keep reflective journals, are potentially productive ways of identifying emerging concerns during the extended practicum.

Although the Intern Concerns Checklist has proven to be a useful tool for documenting the concerns of Saskatchewan interns and reviewing the content and sequence of practicum seminars, it seems clear that it has some limitations. There is need to devise more precise tools to monitor the developmental growth of interns during the extended practicum. Further refinement of practicum experiences will be enhanced by the development of such tools.

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Teacher Disillusionment and Supervision as a Part of Professional Development

Approximately 70% of the 42 teachers in this study personally experienced disillusionment with their profession. The causes of disillusionment are analyzed in this study by three levels of professional development, namely, professional maturing, the consolidated learner, and the embryonic teacher. It was found that the causes of disillusionment and the advice to supervisors specific for assisting disillusioned teachers differed through the three levels of professional growth.

Environ 70% des quarante-deux enseignants dans cette étude ont personnellement exprimé un désillusionnement avec leur profession. Les causes du désillusionnement ont été analysées dans cette étude à partir de trois niveaux de développement professionnel, à savoir, la maturité professionnelle, l'apprenant consolidé, et l'enseignant embryonnaire. On a trouvé que les causes du désillusionnement et les conseils à donner aux superviseurs pour aider les différents types d'enseignants désillusionnés étaient différents pour les trois niveaux de maturation professionnelle.

Introduction

When completing a study to determine the supervision appropriate for the professional growth of teachers at three levels of development, an interesting and unanticipated result appeared (Sandell, 1990). Eighty percent of 42 elementary teachers interviewed felt that teachers go through a disillusionment phase and 69% of those teachers had personally experienced or were currently experiencing disillusionment with their profession.

The issue of teacher disillusionment is rarely addressed in the literature, although Trew-Williams (1985) described her fourth stage as a "soul searching, cynical phase." It came when teachers asked themselves, "What am I doing this for?" as they observed other teachers who put in the minimum amount of effort and had the same advantages as they did. The disillusionment was not related to their competence, but to their perception that the system did not appreciate their contribution or efforts.

At first, we took the position that although some kind of soul searching may be commonplace, the notion of a distinct disillusionment stage for all

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teachers was probably overstated as disillusionment might be confused with temporary dissatisfaction or disgruntlement. However, as the study progressed it became obvious that teachers' disillusionment with their profession was widespread and important.

Methodology

Because teachers so often reported the impact of supervision on professional development as inconsequential (McCarty, Kaufman, & Stafford, 1986; and Thompson & Zeimer, 1982), the original study (Sandell, 1990) was designed to examine the commonalities and differences with respect to their professional development, as well as appropriate supervision for teachers. Burden (1982) concluded that one reason supervision might be ineffective was the failure to provide different types of supervisory assistance for teachers at different developmental levels. Some adult and teacher development literature, for example Trew-Williams (1985), describe a differentiation with respect to the levels of professional development. From this literature and the experience of the authors, three levels of professional development were designed for analyzing elementary teachers as adult learners.

The label *professionally maturing* was used for the teachers at the highest of the three levels of professional growth in lieu of *renewal/mature*, often used in the literature, because the former suggests a continuous process of professional development, whereas the latter implies "having arrived." The middle level of professional development, *the consolidated learner*, came directly from the stage literature (Feiman-Nemser, 1983; Garman & Hazi, 1988; Huberman, 1988) and involved consolidated maintenance and embryonic consolidation, adjustment, integration, stabilization and maintenance of pedagogical theories and issues. The *embryonic teacher* described teachers at the lowest of the three levels of professional development and was not found in the literature. The term *embryonic* in this study implies a lack of professional growth, not the amount of teaching experience (Burden, 1982; Fuller & Bown, 1975). It is preferable to the often-used labels *novice* and *beginner*, which seem to indicate that the teachers are neophytes.

The primary source of data was a semistructured, in-depth interview of 30 to 40 minutes with each of 42 elementary teachers from a school system in Nova Scotia. The methodology was similar to Herzberg's (1966) *critical incidents* method used to determine the two-factor theory of motivation. This methodology requires each person to describe events, or critical incidents, personally experienced at work that produce a marked improvement or reduction in their job satisfaction.

The 42 participants were from a single district in Nova Scotia serving a mixture of rural and urban students and were selected by their principals to represent one of the three levels of professional development. Principals from 15 schools volunteered for the study. Only elementary schools were selected because of the documented professional development differences between secondary and elementary teachers (Cuban, 1983).

Using teachers from the same system opens the possibility that a major cause of disillusionment might be the district policies, which would make generalizations of the findings difficult. However, in our opinion, this particular district was similar to other Nova Scotia districts, and if any differences

were prevalent with supervision, it would be in favor of the district policies, which seemed to be slightly advanced in formative, positive supervision.

A teacher profile instrument developed for the study from the developmental stage and non-stage literature in both adult learning and teacher development was used in the selection. The instrument listed the distinguishing characteristics of the teachers in each of the three levels of professional development. Each principal used this instrument to select a teacher for each category and forwarded this list to the researcher without linking the teachers with the categories.

The teacher sample was composed of 15 professionally maturing, 15 consolidated/maintenance, and 12 embryonic teachers. One of the researchers visited the teachers in their schools or homes and interviewed and taped for approximately 30 to 45 minutes, using a semistructured probing, in-depth questionnaire approach, during April and May 1989. The tapes were transcribed and the data analyzed according to constructed themes and unexpected themes of apparent significance that emerged from the data. The interviewer was informed of the principal's categorization of the teachers only after the interviews, transcripts, and initial analysis had been completed.

Among the questions the 42 subjects were asked were "Do teachers go through a disillusionment stage?" "Have you gone through one?" "What, in your opinion, was the cause?" Later during the interview participants were asked, "What advice would you give to a supervisor working with a disillusioned teacher?"

Findings

Causes of Disillusionment

Of the 42 teachers in the sample, 69% indicated that they had experienced a major disillusionment phase in their career. Table 1 presents the reported causes of disillusionment.

Both the professionally maturing and consolidated/maintenance groups of teachers agreed on the major causes of disillusionment, that is, frustrations with relationships and lack of environmental stimulation. The teachers at the embryonic stage of development cited two different major causes of their disillusionment: bad classes, problem students, and no appreciation or support. It is interesting to note that the professionally maturing teachers cited no appreciation or support as the least important cause of their disillusionment. Whereas no embryonic teachers cited personal problems as a cause of their disillusionment, 33% of the professionally maturing teachers cited personal problems as a cause.

In many ways the causes of disillusionment reinforce the differences among the categories of teachers in this study, particularly between the professionally maturing and embryonic teachers. Some of the more specific comments that related to frustrations with relationships were the negative impact of staffroom conversations, superficiality of staff interactions, and professional development directed solely to raising one's teaching certificate, which at times distracted teachers from preparation and delivery of lessons, with enthusiastic teachers being ostracized by others more concerned with the routine day-to-day activities.

Table 1
Percent and Rank of Teacher Cited Causes of Their Own Disillusionment by Category of Professional Development

	PM		CM		E		Total	
	%	Rank	%	Rank	%	Rank	%	Rank
Lack of environmental stimulation	47	2	40	1*	25	4	38	2
Bad class, problem students	13	4	33	3	42	1*	29	3
Frustrations with relationships	67	1	40	1*	33	3	48	1
Personal problems	33	3	13	5	0	5	17	5
No appreciation or support	7	5	20	4	42	1*	21	4
Total Responses	25		22		17		64	

Note: Columns total more than the sample in each category because respondents could offer more than one response.
PM = Professionally Maturing (N = 15)
CM = Consolidated/Maintenance (N = 15)
E=Embryonic (N = 12)
*Tied scores

The no appreciation or support cause of disillusionment involved fear and confusion about the evaluation process as compared with the supervision process. The common "watchdog" focus and the alleged artificiality and formality of evaluation promoted disillusionment with the supervisors and the supervision process. With respect to artificiality, participants referred to the futility, superficiality, and formality of the routines for no substantive gains. The "watchdog" focus meant the control and inspection of teachers for the purpose of keeping teachers in line.

Environmental stimulation involved collaboration among teachers from the same staff or the same district as they traveled to and from courses and participated cooperatively in assignments. Such experiences appeared to combat boredom and disillusionment and caused stimulation for professional growth. Also teachers ranked courses, followed by inservice sharing with other teachers, informal acts of the principal, and conferences as the most important activities and experiences relating to environmental stimulation. Informal acts of the principal included showing interest, modeling appropriate behavior, being available to discuss problems, recognizing achievement, and encouraging experimentation.

Supervision

Table 2 presents the information from teachers of different developmental stages giving specific advice to supervisors for assisting disillusioned teachers.

The category of support, feedback, empathy, and understanding was the first or second most often mentioned advice by all three levels of teachers. The professionally maturing and consolidated/maintenance teachers included

Table 2
Percent of Teachers by Teacher Professional Development Stages and Advice to Supervisors Specific for Assisting Disillusioned Teachers

	PM		*CM*		*E*		*Total*	
	%	*Rank*	*%*	*Rank*	*%*	*Rank*	*%*	*Rank*
Support, feedback, empathy, understanding	47	2	73	1	75	1	64	1
Facilitate contact with professional development resources	53	1	33	2	16	3*	36	2
Informal talk, get to know teacher interests	33	3	7	5	16	3*	20	3*
Facilitate study break, leave	20	4*	13	3*	25	2	20	3*
Move, shift teacher	20	4*	13	3*	8	5	14	5
Total Responses	26		21		17			

Note: The total number of responses exceeds the sample size because respondents were encouraged to offer more than one response.
PM = Professionally Maturing (N = 15)
CM = Consolidated/Maintenance (N = 15)
E=Embryonic (N = 12)
*Tied scores

facilitating contact for teachers with professional development resources as important advice to supervisors. The second most often mentioned advice by the embryonic teachers was to facilitate study breaks or leaves.

Only 48% felt at this point in their careers that supervision had contributed positively to their professional development, whereas 41% believed that it had made no contribution. It appears that supervision, perceived by so many to be not helpful may have contributed to disillusionment.

In the study 71% of the respondents envisioned the supervision process as being "potentially" helpful, and they desired a supervisor who would accord them support, suggestions and feedback, and professional literature. An equal number preferred a model that permitted collaboration with peers and constructive criticism by the supervisor, who would also work with students in the classroom.

Most respondents (81.5%) believed that teachers should have a more or less equal role in the supervision process, while 74.2% favored the notion of teachers supervising teachers, noting the collegial relationship they already enjoyed and the expertise of teachers compared with that of principals. Others (22.8%) who opposed the concept believed that their relationship with peers would suffer, that colleagues would be overly critical, or that they could not bring themselves to criticize their peers or to accept criticism from them. Some pointed to the need for an authority figure. Supporters and detractors alike agreed on the need for the training of supervisors.

Most participants, responding to some direct questions with respect to teacher supervision, reported that they had been supervised once every three

years and described a traditional checklist form of evaluation. Many expressed anxiety with regard to this process. However, the majority (60.5%) perceived that the supervision process had changed positively over the last few years.

The artificiality, formality, judgmental, and threatening natures of supervision were considered to be major barriers to effective professional development, followed by infrequency of supervision, the incompetence of the supervisor, and the distance between supervisor and teacher. All these factors seemed to contribute to disillusionment.

The most common advice of the respondents for the functioning of the supervisor, was to establish a positive supervisor-teacher rapport and to get to know their teachers, their interests, expertise, philosophy, and stage of development. Next they stressed humanizing the supervision process, that is, showing kindness, encouraging teacher professional development, and focusing on their own professional and personal development. This advice is similar to that already discussed to assist a disillusioned teacher.

The overwhelming majority (95%) of teachers claimed their growth came from informal influences, including informal interactions with fellow teachers and the informal acts of principals, described as showing interest, modeling appropriate behavior, being available to discuss problems, recognizing achievement, and encouraging experimentation. Informal influences such as discussions about the practice of teaching, opportunities to observe another's teaching, and to teach and learn from one another were deemed more significant than formal influences, that is, conferences, inservices, supervision and courses. The informal influences took place in training sessions, faculty meetings, teachers' lounges, hallways, and classrooms.

Ninety-two percent pointed to the informal, everyday acts of the principal as important to teacher professional development, including disseminating professional materials, focusing professional interests around specific themes, soliciting teacher responses to educational concerns, encouraging experimentation and motivation, and publicizing achievements. Teachers felt that growing professionally through informal interaction with their peers or from the informal everyday acts of the principal, they would be less prone to fall prey to disillusionment. Such informal influences would provide relationships, stimulation, appreciation, support, advice, and possibly a "listening ear" for personal problems.

It is interesting that teachers would perceive supervisors as being personal counselors. This perception seemed to be based on supervisory activities that included modeling appropriate attitudes, providing support by encouraging experimentation, publicizing achievements, and listening to teachers' problems.

Conclusions

Supervisors should attend to the causes of disillusionment among their teachers by stages of professional development, first, because it is a prevalent condition, second, because they can play an important role in preventing disillusionment, and, third, because they can assist teachers to see their profession in a positive light.

Teachers at the middle level of professional development (consolidated learner) and teachers at the highest level of professional growth (professional-

ly maturing) both were most disillusioned by frustrations with relationships and lack of environmental stimulation. In more specific terms, their frustrations were with staffroom conversations, superficiality of interactions with other staff members, colleagues being solely interested in professional development to raise one's certification for monetary reasons, and enthusiastic teachers being ostracized by others more concerned with routine activities. The teachers who were not showing professional growth (embryonic) most often cited bad classes, problem students, and no appreciation or support as their cause of disillusionment. In addition, one third of the teachers at the highest level of professional development indicated that personal problems added to their disillusionment, whereas none of the embryonic teachers perceived personal problems as a cause of their disillusionment.

These results indicate that supervisors cannot treat all teachers equally when attempting to bring teachers out of a disillusionment phase. The most professional teachers also need assistance with their personal problems, better relationships with their colleagues and more environmental stimulation. With these teachers, supervisors should encourage professional development by joint course enrollments, personal and informal acts of the principal, and involvement in conferences. Teachers who are least professionally developed need more direct help with their classes and problem students, along with greater appreciation and support for their work. They appeared to be fearful and confused about the evaluation process, mainly seeing it as artificial and summative.

When asked to provide advice to supervisors, teachers at all levels of professional development mentioned supportive feedback and empathy and understanding as the first or second most important advice to supervisors for helping disillusioned teachers. The two highest levels of professionally developed teachers included facilitating contact for teachers with professional development resources as important advice to supervisors, while the embryonic teachers' second most often mentioned advice was to facilitate study breaks or leaves.

A significant number of professionally maturing teachers had other advice to offer, such as informal discussions for getting to know teachers' interests, study breaks, and moving teachers, whereas the consolidated/maintenance teachers rarely gave informal discussions and getting to know teachers' interests as important advice. The embryonic teachers rarely advised moving teachers from one class situation or school to another.

Overall, over 40% of the teachers felt that supervision had not contributed positively to their professional development to this point in their career, yet at the same time almost three quarters of the teachers felt that supervision had potential for being helpful, particularly to the disillusioned teacher. Disillusionment with teaching in general, and supervision specifically, may be related to supervisors not treating teachers at different levels of professional maturity in the same ways.

This study highlights the fact that teachers are at different stages of professional development, that they will almost all go through a stage of disillusionment with their profession, and that teacher disillusionment must be treated differently depending on the stage of professional maturity. Proper teacher

supervision based on stages of professional maturity could advance professional development that would simultaneously combat teacher disillusionment.

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Teachers' Views of Technology

This article reports the results of a survey of 1,200 teachers' views on technology. Specifically, teachers' responses to existing statements about technology in contemporary society were examined. As well, the paper describes new statements about technology based in the sociology of technology and describes teachers' responses to these statements. A series of statement pairs (positive and negative exemplars) were designed to elicit teachers' responses to the issues of technology and quality of life, technology and employment, technology and health care, technology and food production, technology and social well-being, and technology and its social control. The responses indicated that the teachers in this sample overwhelmingly described and critiqued technology from what is described in the paper as an artifact perspective, that the majority hold an incomplete view of the nature of technology, and that most feel technology is beyond the control of the individual. No significant relationship was found between these responses and sex, age, teaching experience, subjects taught, school size, and preservice education. Implications for current classroom practice and preservice education are discussed.

Cet article présente les résultats d'une enquête portant sur les vues de 1200 enseignants concernant la technologie. Plus précisément, on a analysé les réponses des enseignants à des questions d'actualité au sujet de la technologie dans la société contemporaine. L'article décrit également de nouveaux points de vue fondés sur la sociologie de la technologie, et les réactions des enseignants à ces points de vue. Une série de paires de déclarations (dont l'une positive et l'autre négative) était concue pour obtenir les réponses des enseignants aux questions de technologie et qualité de la vie, technologie et emploi, technologie et santé, technologie et production alimentaire, technologie et bien-être social, et technologie et contrôle social. Les réponses ont montré que la plupart des enseignants de cet échantillon ont décrit et critiqué la technologie à partir de ce qu'on appelle dans cet article une perspective d'artefact; que la majorité a une vue incomplète de la nature de la technologie, et que la plupart trouvent que la technologie est au-delà du contrôle de l'individu. Il n'y avait pas de relations significatives entre ces réponses et le sexe, l'âge, l'expérience dans l'enseignement, les matières enseignées, la grandeur de l'école, et la formation initiale. Les implications pour la pratique éducative en cours et la formation initiale sont présentées.

Introduction

In several Canadian provinces (British Columbia, Alberta, Saskatchewan) a number of curricular changes, particularly in the areas of science and social studies, have led to an increased emphasis on the study of technology, with the hope of creating technologically literate school graduates.

Describing technology and technological literacy has turned out to be a complex task. A comprehensive overview of the issues and problems encountered when attempting this description was the focus of a double issue of the *Bulletin of Science, Technology, and Society* (1986). A close examination of this issue indicates that the task was not totally accomplished. Staudenmaier

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(1985) offers a thorough analysis of the perspectives on technology offered in all pertinent papers in the journal *Technology and Culture*. Although these perspectives are of immense help to the theoretician, they were never written with the educational researcher in mind.

Fleming (1989) offered a combination of a theoretical model of technology with its concomitant instructional implications. A portion of the model is based in Kline (1985). He starts with common usage, namely, that technology is hardware. By hardware he means all non-natural objects manufactured by humans. He then describes the second most common usage, that of technology as the process of manufacturing the hardware. Kline argues that this descriptor must include all elements necessary to manufacture particular hardware. These would include people, machines, resources, as well as the physical, legal, economic, and political environments. He labels this the sociotechnical system of manufacture.

The third perspective suggested by Kline (1985) is that of technology as know-how. Know-how is the information, skills, processes, and procedures for accomplishing tasks. These three usages, he claims, form the common view of technology.

Kline (1985) goes on to argue that these three usages are inadequate. He suggests that a fourth usage is necessary to give purpose to the manufacture of hardware. This fourth concept he labels the sociotechnical system of use. It contains the hardware and the people necessary to achieve the purpose of extending human capacities. As an example, says Kline:

> We embody automobiles in a system of roads, gas stations, laws for ownership and operation, rules of the road, and use the combined system (the autos plus all the rest) to extend the human capacity for moving ourselves and our possessions about. (p. 216)

Without a sociotechnical system of use, the manufacture of hardware has no purpose. Kline (1985) elaborates further by stating that "sociotechnical systems of manufacture and sociotechnical systems of use form the physical bases of all human societies past and present" (p. 217). This pattern of purposeful innovation in sociotechnical systems distinguishes humans from other animals. Kline concludes by saying that "few topics are more basic ... than an understanding of the nature of sociotechnical systems and the pattern in which we humans use them to create the physical bases for our societies past and present" (p. 218). This description of technology, which combines the four perspectives described above, is referred to as sociotechnology. A person understanding sociotechnology would be technologically literate because this person has the power and the freedom to use that power to examine and question issues raised by technology. This empowerment would enable such a person to become critical about technology. Being critical must never be confused with being antitechnology. Rather, being critical about technology means having the intellectual skills to examine the pros and cons of any technological development, to examine its potential benefits, its potential costs, and to perceive the underlying political and social forces driving the development. It was this model of sociotechnology that served as the theoretical base for several aspects of the research described in this article.

A significant volume of research does exist that describes students' views on technology. The views of high school graduates (Aikenhead, Fleming & Ryan, 1987; Aikenhead & Ryan, 1987) and the views of undergraduate science students (Fleming, 1988) have been explored. However, very few research studies are designed specifically to document teachers' views on technology. Lack of data in this area poses serious problems for those who wish, for example, to design preservice and inservice programs for those teachers who must implement curricula with a sociotechnology focus. In Saskatchewan, recent curriculum reform has resulted in the creation of six Common Essential Learnings (CELs), one of which is called technological literacy. It reflects the concept of sociotechnology described above.

These CELs, where possible, are to be presented in all core subjects through all grades. Technological literacy, then, is to be a strand woven through all subjects. This is a completely new curriculum emphasis that is not reflected in most existing materials. Given that in teachers' academic and professional education little or no time has been spent on the study of sociotechnology, the teacher response has been as expected. Requests for inservice programs are constant. As previously mentioned, lack of knowledge about teachers' views has become a stumbling block. It was this lack of knowledge that prompted the research described below.

Purpose

The purpose of this research was to conduct an exploratory study of teachers' views on the nature of technology.

Design and Procedures

This study used survey research methods. A random sample of 1,200 teachers was drawn from the entire K-12 teaching population (N=12,000) of the province of Saskatchewan. The list of all teachers was provided by the Saskatchewan Teachers' Federation. The research staff of the Federation drew the sample. Each teacher in the sample was mailed the survey instrument (described below). After 10 days, a reminder card was sent. Five hundred, ninety-six teachers (49.6%) completed and returned the survey.

The Survey Instrument

The instrument was comprised of three sections. The first section asked teachers to respond to statements about technology and its relationship with science taken from the instrument *Views on Science-Technology-Society* (VOSTS) form mc.3 (Aikenhead & Ryan, 1987). These are listed in Appendix A. The response format was closed, that is, for each VOSTS statement, a range of responses was offered to the respondents. These responses represent categories that were generated in earlier work (Aikenhead, Fleming, & Ryan, 1987) by analyzing written responses to these statements. The possible responses are called Teacher Position.

The second section of the instrument asked teachers to offer short written responses to 14 statements created by the researcher about technology arising from the literature in the sociology of technology. These statements dealt with the relationship between technology and employment, the nature of technological development, personal standard of living and technology, the relationship between technology and social change, technological determinism,

and specific technological developments. The format of the statements and the methods for testing their reliability was based on earlier reported work (Aikenhead, Fleming, & Ryan, 1987). The teachers in the sample were randomly assigned to four subgroups (N=300) for this section. Each subgroup received four of the new statements. These statement subgroupings are presented in Appendix B. (Note that two of the new statements were repeated. These were randomly selected.) A response rate of 50% ensured a theoretical maximum of 150 paragraph responses for each statement. The nonusable responses are tabulated in the analysis section and were so small (1-3%) as to guarantee a large number of usable paragraphs for analysis for each statement. The research cited earlier had found for the analysis of written argumentative responses theoretical saturation was reached by or prior to the 30th response.

The third section of the instrument asked for demographic information.

Analytical Procedures

The VOSTS results were analyzed using SPSS-X to generate response profiles for each statement on the instrument. The written responses were analyzed according to the method of Aikenhead, Fleming, and Ryan (1987). For each of the new statements, the written paragraph responses were analyzed to discern common arguments that, when categorized, represent teachers' common viewpoints. These categorized viewpoints become the teachers' positions reported in this paper.

Combining the demographic data and the response profiles, Pearson correlation coefficients were calculated to determine whether there were relation-

Table 1
Demographics of the Respondents

Gender		*Median Age*	
Female	58%	38 years	
Male	42%		
		Median years of teaching experience	
		13 years	
*Division Mainly Taught**		*Student Population of School*	
Division I	27%	Fewer than 100	9%
Division II	22%	100 - 250	38%
Division III	15%	250 - 500	33%
Division IV	30%	500 - 750	11%
Other	6%	750 - 1000	5%
		1000 - 1250	2%
		More than 1250	2%
University courses in any physical sciences			
No	67%		
Yes	33%		

*Division I (Grades K-3), Division II (Grades 4-6), Division III (Grades 7-9), Division IV (Grades 10-12)

ships between VOSTS responses and sex, age, years of teaching experience, subjects taught, school size, and preservice science education.

Results

The results are presented in four sections. The first summarizes the demographic data, the second presents the VOSTS results, the third presents the results of the analysis of the argument responses to the new statements, and the fourth the analysis of the VOSTS/demographics interactions.

The Demographic Data

The demographic data are presented in Table 1. As the reader is well aware, attention must be paid to the representativeness of the respondents vis-à-vis the population. The population data for teachers show a median age of 38 years, with the median years of teaching experience at 13 years. This is identical to the figures for the respondents. As well, the gender percentages and student population percentages closely reflect the population parameters. Nevertheless, the response rate is such that one must be cautious in generalizing to the entire teaching population.

Table 2

VOSTS 12.1	In order to improve the quality of living in Canada, it would be better to invest money in technological research RATHER THAN scientific research.	
	Teacher position	*% of Usable Responses*
A.	Invest in *technological* research because it will improve production, economic growth, and unemployment. These are far more important than anything that scientific research has to offer.	1
B.	There is really no difference between science and technology.	0
C.	Scientific knowledge is needed to make technological advances.	10
D.	They interact and complement each other equally. Technology gives as much to science as science gives to technology.	26
E.	Each in its own way brings advantages to society. For example, science brings medical and environmental advances, while technology brings improved conveniences and efficiency.	46
F.	Invest in *scientific* research—that is, medical or environmental research—because these are more important than making better appliances, computers or other products of technological growth.	3
G.	Invest in *scientific* research because it improves the quality of life (e.g., medical cures, answers to pollution, and increased knowledge). Technological research, on the other hand, has worsened the quality of life (e.g., social welfare, education, job creation programs, the fine arts, foreign aid, etc.)	2
H.	Invest in *neither.* The quality of living will not improve with advances in science and technology, but will improve with investments in other sectors of society (e.g., social welfare, education, job creation programs, the fine arts, foreign aid, etc.)	3
I.	I don't understand.	0
J.	I don't know enough about this subject to make a choice.	4
K.	None of these choices fit my basic viewpoint.	5

Results of the Analysis of the VOSTS Statements

A general comment is in order first. The VOSTS item numbers may appear to be erratic. The reader is reminded that these are the VOSTS statements which deal with technology and are drawn from a larger, more orderly collection of statements.

1. *Science, technology, and the quality of life: VOSTS 12.1 and 6.1.*

The data for VOSTS 12.1 are presented in Table 2. VOSTS 12.1, a general statement concerning quality of living and science and technology requires that the respondent differentiate between science and technology and use this differentiation when responding. Seventy-two percent of the responses cluster around two items, D and E. Position D, representing 26% of the responses, offers a contemporary view of the nature of the relationship between science and technology, namely, that they interact and complement each other. Position E, representing 46% of the responses, posits a functionalist role for science in which science directly benefits society through medical and environmental advances. This suggests a confusion over the social roles of science and technology, a suggestion further supported by the responses to the next item, VOSTS 6.1.

VOSTS 6.1 moves from the more general statement, quality of living, raised in 12.1 to specific social problems such as poverty, crime, unemployment, overpopulation and the threat of war. The data from VOSTS 6.1 are presented in Table 3.

Once again, a clear understanding of the nature of science and the nature of technology is required. As can be seen from Table 3, half the respondents offer a populist view of science and technology in which these enterprises are under

Table 3

VOSTS 6.1	Science and technology offer a great deal of help in resolving such social problems as poverty, crime, unemployment, over-population, and the threat of a nuclear war.	
	Teacher position	*% of Usable Responses*
A.	Science and technology can certainly help to resolve these problems. The problems could use new ideas from science and new inventions from technology.	4
B.	Science and technology can help resolve some social problems but not others.	6
C.	Science and technology solve many social problems, but science and technology also *cause* many of these problems.	29
D.	It's not a question of science and technology helping, but rather it's a question of *people* using science and technology wisely.	50
E.	It's hard to see how science and technology could help very much in resolving these social problems. Social problems concern human nature; these problems have little to do with science and technology.	6
F.	Science and technology only make social problems worse. It's the price we pay for advances in science and technology.	1
G.	I don't understand.	0
H.	I don't know enough about this subject to make a choice.	1
I.	None of these choices fit my basic viewpoint.	3

Table 4

VOSTS 11.2	Defining what technology is can cause difficulties because technology does many things in Canada. But MAINLY technology is:	
	Teacher Positions	*% of Usable Responses*
A.	Very similar to science.	0
B.	The application of science.	26
C.	New processes, instruments, tools, machinery, appliances, gadgets, computers, or practical devices for everyday use.	26
D.	Bombs, military hardware, nuclear reactors, etc.	0
E.	Robotics, electronics, computers, communication systems, automation, etc.	4
F.	A technique for doing things.	5
G.	A way of solving practical problems.	2
H.	Inventing, designing and testing things (e.g., artificial hearts, computers, space vehicles).	4
I.	Ideas and techniques for designing and manufacturing things, for organizing workers, business people and consumers, for the beneficial progress of society.	27
J.	I don't understand.	0
K.	I don't know enough about this subject to make a choice.	1
L.	None of these choices fit my basic viewpoint.	6

the wise control of people (Position D). Given the exploratory nature of this study, interviews with selected respondents could clarify the meaning of "people." Which people the respondents refer to should be explored further. Twenty nine percent of respondents (Position C) confuse the role of science and technology. It appears that, as in previous research findings (Fleming, 1987a), they lump the two terms together as "technoscience" and see no differing roles for the two. This confusion can be examined in the light of the data in the next two tables.

2. *The relationship between science and technology: VOSTS 11.2, 11.3 and 39.*

VOSTS 11.2 (Table 4) offers insight into the practical definition(s) of technology offered by the respondents.

For all intents and purposes, there are three positions. The first, item B, views technology as applied science. It has been argued elsewhere (Barnes & Edge, 1982, p. 140) that this is an untenable position. The second, item C, sees technology as know-how and artifacts. This restricted meaning for technology (Fleming, 1987b; 1989) will be seen again in the analysis of arguments under the heading Results of the Analysis. In all, 52% of the respondents hold an incorrect or restricted view of technology. The final group (27%) opt for item I, a position much closer to the view of technology called sociotechnology, in which technology is seen as a social process.

VOSTS 11.3 (Table 5) explores the nature of the relationship between science and technology. As argued earlier (Fleming, 1987a), unless specifically asked to do so, people do not differentiate between the two enterprises. This was the case in VOSTS 12.1. where "technoscience" best describes the respondents' views of science and technology. This item had the largest

Table 5

VOSTS 11.3	Science and technology are closely related to each other.	
	Teacher Position	*% of Usable Responses*
A.	Science is the basis of all technological advances; though it's hard to see how technology could aid science.	1
B.	Scientific research leads to practical applications in technology, and technological developments increase the ability to do scientific research.	87
C.	Although they are different, they are linked so closely that it's hard to see how science could aid technology.	4
D.	Technology is the basis of all scientific advances; though it's hard to see how science could aid technology.	1
E.	Science and technology are essentially the same thing.	1
F.	I don't understand.	0
G.	I don't know enough about this subject to make a choice.	2
H.	None of these choices fit my basic viewpoint.	3

proportion of answers. As can be seen in Table 5, 87% of the sample chose item B, which could present a reciprocity between science and technology. This is a marked increase from the 26% in VOSTS 12.1 who chose position D, a comparable response.

VOSTS 39 explores an issue that is very evident in Canadian media, namely research and development (R & D). Ziman (1984) offers the following insight into R & D:

> Like the distinction between science and technology, the distinction between "research" and "development" is becoming more and more difficult to discern. The combination "Research and Development"—"R & D"—can be used to cover a whole range of investigatory procedures, from the most abstract theoretical analysis to the most earthly trial and error, which may be found in all fields of "S & T," whether motivated by a desire for fundamental understanding, as in cosmology, or by a desire to make a commercial profit, as in the manufacture of weapon systems. (p. 122)

Examining VOSTS 39 results (Table 6), one finds a wider range of responses to this item. Items C and D constitute the major (54%) response. In both of these items, the description of research is constant. The description of development changes. In item C, development is a functionalist process that benefits society. In item D, development is much more closely related to Ziman's (1984) strategic research. According to Ziman, "Strategic research is also knowledge-oriented but it has a conscious utilitarian purpose, such as the determination of the facts and theoretical principles relevant to existing or projected technologies" (p. 142). The 13% of respondents who chose item F seem closest to a contemporary but simplistic view of R & D. Item H reflects the concern over the use of R & D.

Results of the Analysis of the Argument Responses

As mentioned earlier, 14 new statements based in the sociology of technology were used with sample subgroups. These are found in part two of the questionnaire (Appendix B). The format of the statements and the analysis of the

Table 6

VOSTS 39	Science and Technology are important to the research and development (R & D) in Canadian industry. What does research and development mean to you?	
	Teacher Position	*% of Usable Responses*
A.	R & D means finding new answers to questions about the world and about people.	3
B.	R & D means progress by making life easier and the quality of life better.	2
C.	Research is exploring for new facts, ideas and information. Development is putting them to use in order to benefit society.	35
D.	Research is exploring for new facts, ideas and information. Development is putting them to use by coming up with new and creative ideas.	19
E.	R & D means exploring new ideas and problems in industry, in order to help an industry overcome its problems and thereby produce newer and better products.	5
F.	R & D means a combination of science and technology. Research leads to development, and development leads to improved research.	13
G.	R & D means helping humanity by finding medical cures and new technologies. But *unanticipated* effects of R & D can also cause social problems.	5
H.	R & D usually means helping humanity by finding medical cures and new technologies. But R & D also means harming society by creating such things as nuclear arms and other wasteful or unhealthy technologies. It depends on the R & D or how it is used.	17
I.	I don't understand.	0
J.	I don't know enough about this subject to make a choice.	1
K.	None of these choices fit my basic viewpoint.	2

written arguments has been described earlier (Aikenhead, Fleming, & Ryan, 1987).

As described in this paper, participants were asked to respond with "agree," "disagree," or "can't tell" to their statements. As well, they were to offer a justification for their choice in the form of an argumentative paragraph. The central focus of the analysis is the paragraph. For each paragraph, I wrote a phrase that summarized the argument. The collected phrases were examined to determine common arguments. These became the "teacher positions." A general comment is in order. The overwhelming response to most of the statements was to reason with *artifacts*. Simply put, for many, in response to statements B-1, B-2.1, B-2.2, B-4.1, B-4.2, B-5.1, B-5.2, B-6.1, B-6.2, the name of an artifact—microwave oven, VCR, satellite TV—was used as a replacement for a reasoned argument.

For example, the responses to the statement B-4.1 "Because of technology, my standard of living continues to improve" fell into two camps. One minority (15%) chose to offer arguments based on improved quality of life. A second minority (5%) argued it was one's finances, rather than technology, that determines one's standard of living. The majority (80%) responded with the name of an artifact. The arguments took the form of a single sentence

Table 7

Technological changes result in social changes (B-7.1).

	Teacher Position	*% of Usable Responses*
A.	My lifestyle relies on technology (16 artifacts are names, including the computer, word processor, automated tellers, and computerized axle flow combines)	83
B.	There is an improved quality of life (leisure time).	4
C.	Demographic patterns change.	9
D.	The structure of the family unit has changed.	3
E.	Non-usable.	1

response: "Yes it has, think of the ——," where the blank can be filled in with a specific artifact. For this item 32 artifacts were named.

When subjects were asked to respond to statements about specific technologies—medical technology (B-5.1/5.2) and agricultural technology (B-6.1/6.2) in this case—the "reasoning by artifact" process again dominated, with over 90% of the respondents naming specific medical or agricultural artifacts. Items B-7 and B-8, dealing with the relationship between technology and social change, also follow this pattern.

The following two tables, Tables 7 and 8, present the data offered in response to items B-7.1 and B-7.2. As can be seen, 83% of respondents offered the reasoning-by-artifact responses described above.

In Table 8, the issue of social change leading to technological change is raised. The majority position (Item A, 77%) is that society has "needs and demands" that force a direction on technological development. A close examination of these needs suggests that many of them are artifacts. One may infer that social change is seen as the result of or need for artifacts.

The final items, B-8.1 and B-8.2, are concerned with the control of technology. Responses to item B-8.2 are concerned with the control of technology. In response to item B-8.1, "Technological developments are beyond the control of the average citizen," 75% of respondents felt that average citizens have no control over technology, mostly because they lack knowledge of or the desire to learn about technological development. The remaining 25% felt that citizens

Table 8

Social changes result in technological changes.

	Teacher Position	*% of Usable Responses*
A.	Society's needs and demands dictate the direction technology takes. (Note: 12 needs and demands were identified, including curing illness, mass transportation, home security systems, and time-saving devices).	77
B.	The two are interdependent.	7
C.	I believe the reverse is true.	12
D.	Social change doesn't have to result in technological change.	1
E.	Non-usable responses.	3

could control technology through group actions such as public meetings and demonstrations.

In response to item B-8.2, "The average citizen can help control technological developments," a smaller number (16%) felt that the average citizen was not well enough informed about technology. The remaining respondents were split into three camps. One group (38%) felt that citizens had no control over development, but as consumers had control over the use of the development. Once again, many artifact examples were offered. A second group (26%) felt that we were helpless as individuals, but as a group we could possibly have an impact. The group activities suggested were again meetings and demonstrations.

The third group (18%) argued for controlling technological development through exercising democratic rights. These included voting and writing elected representatives. The remaining 2% felt that development was beyond citizen control because technology was controlled by large corporations and governments, neither of which was responsive to citizen input.

The VOSTS/Demographic Interactions

There were no statistically significant relationships found between VOSTS responses and sex, age, years of teaching experience, subjects taught, school size, and preservice science education.

Discussion

The data strongly suggest that the teachers in this study have a restricted view of technology. Specifically, the majority see technology as applied science or as the products of technology (artifacts). One hastens to add that this consistent view of technology is not the teachers' fault. It is possible, for example, that preservice education presents and/or reinforces their view. A content analysis of preservice education would be in order. One does suspect, though, that such an analysis would show very little attention paid to the study of technology.

This leads one to speculate on the possible sources for such a consistent view. One must ask what sources constantly present technology as applied science and/or artifacts.

In analyzing student beliefs about STS topics, Aikenhead (1988) found that "their sources of ideas about scientists and the social and technological context of science, came from the mass media (TV, films, newspapers, magazines, and books)" (p. 613). He goes to argue that "one can hardly avoid the speculation that students *and* textbook writers acquire their image of scientific research from the same source—television" (p. 614). If one extrapolates from these ideas, it is quite reasonable to assume that most teachers receive their major impressions about science and technology from the media. To verify this, a detailed media analysis would be required, something similar to that done by Nelkin (1987) on print media.

For the immediate future, this study has several implications. First, in choosing materials for classroom use, teachers will choose those materials that most closely echo their own understanding. If the understanding is restricted, so will be the materials chosen. Second, these results suggest that most teachers will teach students either that technology is applied science *or* that technol-

ogy is artifacts. This will cause serious difficulties for those school jurisdictions attempting to implement new curricula with a technological literacy strand through all subjects.

What are implications for preservice education? I do not want to suggest that more coursework is the answer. Nevertheless, it might be appropriate to mandate courses in the sociology of science and of technology for prospective educators. If nothing else, such courses could help prospective teachers come to grips with contemporary arguments about the nature of these enterprises. Teaching methods that allow for a study of technology in all courses must also become a part of the prospective teacher's repertoire. Without these actions, kindergarten to grade 12 students will continually be offered restricted meanings for technology.

From a researcher's perspective, further exploration of these views should be carried out. Interviews with teachers to clarify the reasoning behind their views is essential. The data reported in this paper offer a starting point for these interviews.

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Appendix A

VOSTS form mc.3 Items on Technology

VOSTS 12.1	In order to improve the quality of living in Canada, it would be better to invest money in technological research RATHER THAN scientific research.
VOSTS 6.1	Science and technology offer a great deal of help in resolving such social problems as poverty, crime, unemployment, over-population, and the threat of a nuclear war.
VOSTS 11.2	Defining what technology is, can cause difficulties because technology does many things in Canada.

VOSTS 11.3	Science and technology are closely related to each other.
VOSTS 39	Science and technology are important to the research and development (R & D) in Canadian industry. What does research and development mean to you?

Appendix B

Newly Created Items on Technology

B-1	A country's well-being relies heavily on investment in high technology.
B-2.1	Most employment opportunities in the next 15 years will arise in high technology areas.
B-2.2	Most employment opportunities in the next 15 years will not arise from high technology.
B-3	Technological development occurs when a more sophisticated machine replaces a simpler one.
B-4.1	Because of technology, my standard of living continues to improve.
B-4.2	Because of technology, my standard of living is *not* improving.
B-5.1	Advances in medical technology have improved the quality of health care.
B-5.2	Medical technology has not improved the quality of health care.
B-6.1	Advances in agricultural technology have *not* improved farming.
B-7.1	Technological changes result in social changes.
B-7.2	Social changes result in technological changes.
B-8.1	Technological developments are beyond the control of the average citizen.
B-8.2	The average citizen can help control technological developments.

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